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ORIGINAL ARTICLES

THE LIBERAL DIET IN TYPHOID FEVER*

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The diet in typhoid fever is a problem of special interest. We are dealing here not merely with a prolonged fever, but also with a disease where certain portions of the intestinal tract have undergone extensive pathologic changes. On account of the extensive ulcerations in the ileum, the first essential in the diet must be that it shall not contain any material that might increase the danger of hemorrhage or perforation. With this in view the diet almost universally prescribed has consisted of liquids. As milk has been practically the only liquid possessing a material food value, these patients have been confined almost entirely to a milk diet. In addition, egg albumin in water has frequently been added to the dietary. We must remember in giving milk we are using a food which on reaching the stomach quickly assumes a semisolid form. Acted on by the milk-curdling ferment, rennin, it is rapidly coagulated. When the milk is drunk slowly, or diluted with lime water, these curds may be comparatively small. It is not infrequent, however, in typhoid-fever patients on a milk diet, especially if suffering from a diarrhea, so that the food is hurried through the intestinal tract so rapidly that it is not properly acted on by the digestive juices, to notice large and rather firm curds in the stool. It is not essential at this point to discuss whether such curds are composed chiefly of casein or fat, but it is sufficient to know that we have here masses derived from the milk capable of injuring an ulcerated surface. On the other hand, certain foods like well-cooked cereals, soft-boiled or poached eggs, custards, sugar, jellies, gelatin and strained cooked fruits are finely divided and cannot form hard masses on reaching the stomach. In fact, many other foods, more solid in character, if properly masticated or given in a finely divided form, are in a semiliquid

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state when they reach the ileum. Milk then is not necessarily the safest food in typhoid fever, as in addition to the traumatic action of the curds, such masses are prone to undergo decomposition rather than digestion, thus giving rise to gases which may be important factors in increasing flatulency.

A serious objection to the exclusive milk diet is the natural or acquired aversion of which many patients complain. With marked impairment of the appetite, this frequently results in the patient taking very little nourishment. On account of the aversion during convalescence, when the average typhoid patient has a voracious appetite, he refuses often to take more than a limited amount of milk. We may advise that the patient receive a certain quantity at stated intervals, but unless this amount is small, the patient refuses to take it and insistance on the part of the attendant too frequently leads to disgust and still lessened consumption. Even if the patient is fond of milk, he will rarely drink a sufficient quantity to supply him with the requisite nourishment. Assuming that the average healthy individual requires from 2,200 to 2,500 calories daily, to obtain this amount of nourishment on an exclusive milk diet (as each quart contains 650 calories) he must drink four quarts of milk. This is evidently impossible, especially when we still further increase the amount of fluid by the addition of lime water. As we will see later, the typhoid patient requires, in order to prevent consumption of his own fat and muscle, about one and one-third the amount of food that would be demanded by the healthy person.

Recently the records of a number of patients in the Cook County Hospital who had been kept on an exclusive milk diet were examined, and it was found that the average daily consumption did not exceed 1 quart, or about 650 calories. This, it is true, is considerably below the average as in certain hospitals this average is 2½ quarts. When we consider that a patient may be kept on this starvation diet for a period of five weeks, it is not surprising that they show an extreme degree of emaciation, and require weeks to regain their strength.

Not infrequently the loss in weight may reach 30 or 40 pounds. It is important to know that much of this loss in weight is due to destruction of the body muscle. The proteid destruction in typhoid is really enormous. F. Müller, by determining the nitrogen waste in a typhoid, estimated that in the course of eight days 5½ pounds of body muscle tissue was consumed, and Leyden and Klemperer estimated that a patient had a destruction of 7 pounds of muscle tissue in twelve days. The replacement of such muscle is a very slow and gradual process and accounts for the long period of weakness following typhoid. It becomes then a very important problem to restrict this muscle waste to the minimum, and thus hasten convalescence. It is not improbable that such undernourishment may favor certain complications, as, for instance, impairment of the heart muscle. The question to be answered is, Can we prevent this extreme emaciation which we have accustomed ourselves to consider a necessary accompaniment of typhoid fever, and still not endanger life or increase the frequency of complications?

One of the first questions to be considered is whether a febrile patient's digestion and assimilation is seriously impaired. The work of Curitz and others has shown that assimilation in the typhoid patient is only 5 to 10 per cent. below that of the normal individual. It becomes possible, then, to perfectly nourish a typhoid patient provided he can be given the food. It has also been determined by Shaffer and Coleman that when a typhoid patient receives a sufficient amount of nourishment, the destruction of muscle tissue ceases. If properly fed, the ordinary emaciation and prolonged weakness can be avoided.

It is true that during the height of the fever a typhoid-fever patient may take very little food, but it has been interesting to notice that when given a sufficient variety of well-prepared foods the majority of typhoids will eat a moderate amount even at the height of the disease, provided, of course, they are not actually delirious. Much of the impaired appetite in typhoid fever is due to adherence to the milk diet. Almost invariably during the decline of the fever, the patient will take freely of the nourishment.

Liberal feeding of typhoid patients can scarcely be considered a recent innovation. Glancing back over the dietary treatment it may be noted that progressively the typhoid patient has received a more liberal diet. Until 1835 all fever patients were starved and restricted in the amount of fluids. When Graves at this time recommended giving water in which bread crumbs had been soaked, meat broths and jellies, the movement was considered revolutionary, and excited more comment than does the liberal diet of to-day. Graves and his followers were pleased with the results of feeding and gradually it became customary to feed in fevers. Later milk was added to the typhoid diet, this being a distinct advance, as on the diet recommended by Graves the patient received not more than 300 calories daily. When given two quarts of milk this was increased 1,300 calories. The value of an exclusive milk diet remained unchallenged until Peabody's paper in 1892. He questioned the desirability of the pure milk diet. Since this time there has been an increasing number of physicians, both in this country and in Europe, who have advocated liberal feeding. It is only necessary to mention Müller in Germany, Barr in England, Shattuck, Fitz, Kinnicutt and Le Fevre in America to see that the supporters of the liberal diet included the names of some of the illustrious men in medicine. Shattuck, in discussing Kinnicutt's paper in 1906, said: "For more than ten years I have been feeding my patients according to their digestive powers, rather than according to the name of the disease, avoiding such articles of diet as can leave an irritating residue." In all this earlier work, less attention was paid to the caloric value of the diet than to supplying the patient with a variety of safe foods. Bushuyere was first to pay especial attention to the food value of the typhoid diet, and to place his patients on approximately 2,000 calories daily. This was a big step in advance, and he was able to demonstrate that this quantity of food was well borne and the extreme emaciation was avoided. The recent work of Shaffer and Coleman, however, has been responsible for placing the dietary treatment of typhoids

on a real scientific basis by determining the amount and variety of food necessary to protect the body tissues. They determined that very much larger amounts of food were necessary than had been anticipated. This increased waste in typhoid is due to the combined action of the fever and bacterial toxins. In order to fully protect the body tissues, 60 or 70 calories per kilo were needed. A man of 150 pounds with typhoid requires, in order to maintain his weight, close to 5,000 calories daily or double the amount necessary to maintain a healthy person of the same weight. When a patient received this amount of food it was possible to carry him through his typhoid with very little loss in weight. In fact his weight when he became fever free was the same as before he was taken ill. It is true during the height of the fever there was some loss, but this was rapidly regained as the fever receded. Photographs taken of some of these patients in the beginning of convalescence are certainly in striking contrast to what we have been accustomed to observe with the milk diet. Our experience in the Cook County Hospital with the high caloric diet has impressed me with lack of pallor and emaciation in patients so treated as compared with those on an exclusive milk diet. It is true during the height of fever they may take only a moderate amount of nourishment, but the loss in weight was rapidly regained as the fever declined. It has also been shown that carbohydrates and fats are the best protectors of body proteids and about two-thirds of the food should be carbohydrates and not more than one-third fats. Only a moderate amount of proteids are essential, and this is included in the milk and eggs.

That Shaffer and Coleman were able to treat typhoid with little loss in weight is an extremely interesting observation, but it is questionable whether we should attempt to administer in every case the large amount of food necessary for this purpose. We should perhaps preferably attempt to give a sufficient amount of food to prevent excessive loss in weight. This can be accomplished in the average case by giving 3,000 calories daily.

In order to obtain a sufficient number of calories it is necessary to administer allowable foods with the high nutritional value. The most important of these are milk, cream, eggs and sugar. One quart of milk and a pint of good cream contain 1,600 calories. They may be given in the form of cream soups, with cereals as oatmeal, rice, cream of wheat, corn flakes, etc. The dry breakfast foods like corn flakes are especially desirable, as they take up a large amount of cream; or the patient may receive bread broken up finely in cream or cream toast. Creamed codfish picked up very fine often appeals to the patient's palate. The milk may be heated and arrowroot or cornstarch added. As much sugar (and milk sugar is preferable as it is not so sweet) should be added to all these foods as the patient will tolerate. A very palatable drink is equal parts of cream and vichy or seltzer. Cream and milk may be given in the form of chocolate or cocoa or with coffee. By using these various vehicles it is usually possible to administer a quart of milk and a pint of cream daily. Four or five eggs may be given daily. These may be taken raw

with a little wine, grape juice or orange juice, in the form of eggnogs, soft boiled, poached or as custard or ice cream. If the patient is given clear soup an egg may be stirred in. Each egg has a caloric value of 70, giving a total for five eggs of 350 calories.

It is often difficult to have the patient take 8 ounces of sugar daily, especially if he has an aversion to sweets. The carbohydrates, however, offer the best protection for body protein and must be given freely. The patient may be allowed cereals, bread, baked potatoes or any root vegetable in finely divided form, but the nutritional value of carbohydrates in this form is very low. It is impossible to give a sufficient number of calories unless we use sugar freely. Abundance of sugar may be added to cereals and cooked fruits. Simple desserts may serve as vehicles for sugar. Jellies and strained honey are rich in sugar. Sugar may be used freely in lemonade or the juice of grapefruit. Recently a young lady with typhoid craved candy and was given freely of the various forms of home-made candies, and as might be anticipated without any ill effects. By boiling for two minutes the water and sugar before adding the lemon juice, 4 ounces of milk sugar may be added to a glass of lemonade. The remaining 4 ounces may be easily taken in cereals, in jellies, cooked fruits or in the form of honey. Eight ounces of the sugar is equivalent to 1,000 calories. Occasionally sugar causes nausea, but the majority of patients will take an equivalent of 8 ounces of sugar daily by exercising ingenuity in the method of administering it.

The above diet gives us approximately 3,000 calories, milk and cream 1,600, eggs 350, sugar 1,000. The value of this diet is really in excess of 3,000 calories, as the cereals and other foods to be mentioned have considerable food value. It has been my practice to add 1½ ounces of fat crisp bacon daily. This has a high food value, 250 calories to the ounce, is relished by the patient, and when all the lean is removed and the bacon properly masticated, is harmless. As the bacon makes an excessive amount of fat if given in conjunction with the pint of cream, a less amount of cream may be given and the fat supplied in the form of bacon. One ounce of bacon is equivalent to 4 or 5 ounces of 20 per cent. cream.

With this amount of milk and eggs the patient receives sufficient proteid to supply his needs. Although meats in a finely divided form might be given they are liable to undergo putrefactive changes in the intestine with the formation of gas, and as carbohydrates are more essential for the protection of the body proteids, it is advisable to omit lean meats from the typhoid dietary.

In addition to the foods mentioned the patient may be given a great variety of soft foods as gelatin, tapioca, sago, wine jelly, soft puddings without raisins, baked or mashed potato, macaroni, caviar, etc. The majority of the prepared foods supposed to contain albumin are valueless, as are the various so-called meat juices and peptonoids. It is well to remember that the cheapest and most concentrated food is sugar. Alcohol is unnecessary, although there is no objection to its use in those accustomed to it.

The patient should receive his food at frequent intervals rather than in three meals daily. Feeding at two-hour intervals has been found the most satisfactory. From the above foods we can select a sufficient variety to tempt the appetite, provided the patient is not extremely ill. It is not necessary in this paper to outline the amount of food to be taken at each feeding. Knowing the amount necessary to be taken during the day, the physician or nurse can approximate it. In case of diarrhea it may be necessary to reduce the cream. However, diarrhea occurs so infrequently during the course of typhoid fever that there is little to be feared on this score.

Our discussion of this subject up to the present point has been largely theoretical. The final test must be the clinical results obtained from its application. Omitting as an element of no great importance the pleasure experienced by the patient on such a diet, what is the effect on the death-rate, hemorrhage, perforation and relapses? Conclusions cannot be drawn from a few cases, but we should endeavor to secure a series of cases, if possible extending over years, in order to mitigate the effect of varying severity of epidemics. The most valuable statistics are those from hospitals, where we can compare the results for years of a milk diet with a few years at least on the full diet. Fortunately such statistics are available. The statistics at Johns Hopkins Hospital for two years show a mortality on the liquid diet of 12.7 per cent., on a liberal diet of 6.1 per cent. Hemorrhage occurred on the liquid diet in 16.7 per cent., on the liberal diet in 13.3 per cent. Perforation on the liquid diet in 3.3 per cent., on the liberal diet in 3 per cent. Relapses 12.7 per cent. on the liquid diet and 18.3 per cent. on the liberal diet. The average duration of the fever on the two methods of dieting is the same. Kinnicutt in 1906 collected all available statistics and found the death-rate 10.5 per cent. on the liquid diet and 9.4 per cent. with the liberal diet. Perforation occurred in 2.4 per cent. on a liquid diet and in 1.3 per cent. with the liberal diet. Hemorrhage in 8.8 per cent. on a liquid diet and 4.7 per cent. with the liberal diet. Relapses 10.8 per cent. of cases on liquid diet and 11.3 per cent. of cases with liberal diet. Other statistics might be added, but all the results are so in accord that the above serves the purpose. On the liberal diet the mortality and serious complications, hemorrhage and perforations are more or less decidedly reduced. The only unfavorable result of the free diet is the somewhat greater frequency with which relapses occur. As the average duration of the fever is not increased, and the final results are better, we are forced to admit that the typhoid-fever patient on the properly selected liberal diet has a better chance of recovery than the patient on a liquid diet. When added to this is the much greater comfort of the patient we are compelled to believe that a liberal diet is not only permissible but advisable.

I must confess that when I first began using this diet it was with considerable hesitancy and not a little fear. Statistics, however, had already demonstrated its desirability. After having used it for three years in my service at the County Hospital I can unhesitatingly recommend it. Many of the interns and all of the nurses have become converts.

To see a typhoid-fever patient during his convalescence well nourished and relishing his food is a pleasant sight, when compared with the usual picture of a pale and emaciated patient taking his milk under protest and longing for the lapse of the ten-day afebrile period when he might be given, in his own language, "something to eat." As a matter of fact, he had been actually starved and the request for something to eat was only too true.

Shaffer, P. A., and Coleman, W.: Protein Metabolism in Typhoid Fever, Arch. Int. Med., 1909, iv, 538.
Coleman, W.: Diet in Typhoid Fever, Jour. Am. Med. Assn., 1909, 411, 1145.
Fussell, M. H.: Diet and Care of the Bowels in Typhoid Fever, Am. Jour. Med. Sc., 1909, cxxxviii, 526.
Strous, S.: The Diet in Typhoid Fever, Am. Jour. Med. Sc., 1909, xxxvii, 631.
Houghton, H. A.: High Caloric Diet in Typhoid Fever, Am. Jour. Med. Sci., 1910, cxxxix, 27.

THE CLINICAL DETERMINATION AND SIGNIFICANCE OF SOME OF THE PERIPHERAL SIGNS OF AORTIC INSUFFICIENCY *

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All cardiovascular diseases tend to a disturbance of the circulatory equilibrium and are associated with arteriovenous manifestations. In aortic insufficiency the peripheral signs are most numerous and pronounced, much more so than in any other form of cardiovascular disease. The importance of some of the peripheral signs was fully appreciated and emphasized by Corrigan[1] in his original communication, the first accurate clinical description of the disease.

Although the signs are numerous and pronounced, the clinical recognition of aortic insufficiency is often overlooked, while not infrequently the diagnosis is made or suspected because of certain signs, when no insufficiency is present. These possibilities may arise, in part, from either an incomplete physical examination or the misinterpretation of the signs.

The basis of this report consists of a study of the post-mortem records of the Cook County Hospital and of a series of cases observed clinically in the same hospital.

The post-mortem records for a period of the last seven years, consisting of 1,703 sections, have been carefully examined. During this time there were ninety-three cases of clinically diagnosed aortic insufficiency, either as the essential or associated condition; and of this number the diagnosis was confirmed in 81, or 87 per cent.; not confirmed in 8 and doubtful in 4, because of the indefinite character of the records. During the same period the records show the anatomical findings of an aortic insufficiency in thirty-nine cases, in which the lesion had not been determined clinically. The greatest amount of care was exercised in the examination of these records, not only in reference to the actual valvular

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1. Edinburgh Med. and Surg. Jour., 1832, xxxvii, 225.

TABULATED CLINICAL PERIPHERAL FINDINGS IN AORTIC INSUFFICIENCY: + INDICATES PRESENCE AND — INDICATES ABSENCE

No.	Name.	Diagnosis.	Collapsing Pulse.	Visible Arterial Pulsation.	Capillary Pulse.	Venous Pulse.	Hepatic Pulse.	Femoral Snap.	Delayed Arterial Pulse.	Double Femoral Murmur.	Femoral Tones.	
1	J. L.	Aortic insufficiency	+	+	+	—	—	+	+	+	+	Three tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	—	
		Acute nephritis	..	..	..	..	..	..	..	..	..	
2	F. R.	Aortic insufficiency	+	+	+	—	+	+	+	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	—	
3	M. H.	Aortic insufficiency	+	+	+	—	—	—	+	—	—	
		Aortic aneurysm	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
4	E. R.	Aortic insufficiency	+	+	+	—	—	+	+	+	—	
		Aortic aneurysm	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis	..	..	..	..	..	..	..	..	..	
5	W. N.	Double aortic	+?	+	+	—	—	—	+	—	—	
		Chronic myocarditis	..	..	..	..	..	..	..	..	..	
6	J. C.	Aortic insufficiency	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis	..	..	..	..	..	..	..	..	..	
7	P. T.	Aortic insufficiency	+	+	—	—	—	—	+	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Mitral stenosis	..	..	..	..	..	..	..	..	..	
8	G. H.	Aortic insufficiency	+	+	+	—	—	—	+	+	+	Three tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
9	J. Z.	Aortic insufficiency	+	+	+	—	—	—	+	—	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	+	Two tones.
		Nephritis	..	..	..	..	..	..	..	..	..	
10	J. B.	Aortic insufficiency	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
11	J. J.	Aortic insufficiency	+	—	+	—	—	—	—	—	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Aortic stenosis	..	..	..	..	..	..	..	..	..	
12	G. P.	Aortic insufficiency	+	+	+	—	+	—	+	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
13	W. W.	Lobar pneu. L. L. L.	+	+	+	—	—	+	+	+	—	
		Empyema	..	..	..	..	..	..	..	..	..	
		Aortic insufficiency	..	..	..	..	..	..	..	..	..	
14	P. O.	Aortic insufficiency	+	+	+	—	—	+	+	+	—	
		Mitral stenosis	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
15	P. L.	Aortic stenosis	+	+	+	—	—	+	+	—	—	
		Aortic insufficiency	..	..	..	..	..	..	..	..	..	
16	G. T.	Aortic insufficiency	+	+	+	—	+	+	+	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
		Chronic nephritis	..	..	..	..	..	..	..	..	..	

17	F. U.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	—	
18	J. N.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis.....	..	..	..	..	..	..	..	..	..	
19	R. P.....	Aortic insufficiency.....	+	+	+	—	—	—	+	—	—	
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
20	J. C.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
21	J. W.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis.....	..	..	..	..	..	..	..	..	..	
22	J. S.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
23	D. D.....	Aortic insufficiency.....	—	—	—	—	—	—	—	—	—	
		Mitral stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
24	G. B.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Aortic aneurysm.....	..	..	..	..	..	..	..	..	..	
25	W. W.....	Mitral stenosis	—	—	—	—	—	—	—	—	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
26	S. W.....	Aortic insufficiency.....	—	—	—	—	+	—	—	—	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
27	J. F.....	Aortic insufficiency.....	+	—	+	—	—	+	—	—	—	
		Aortic stenosis.....	+	—	—	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
28	A. M.....	Aortic insufficiency.....	+	—	+	—	—	—	—	+	—	
		Mitral stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
29	N. L.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
30	T. B.....	Aortic stenosis.....	+	—	—	—	—	—	—	—	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
31	E. L.....	Aortic insufficiency.....	+	—	+	—	—	—	+	—	—	
		Mitral stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
32	H. C.....	Aortic insufficiency.....	+	—	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
33	A. J.....	Aortic insufficiency.....	+	+	+	—	—	—	—	—	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Aneurysm, brachial and subclavian	..	..	..	..	..	..	..	..	..	
34	I. P.....	Aortic insufficiency.....	+	—	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
35	L. N.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
36	C. D.....	Aortic insufficiency.....	+	+	+	—	+	—	+	+	—	
		Mitral insuffic. and stenosis.	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	

No.	Name.	Diagnosis.	Collapsing Pulse.	Visible Arterial Pulsation.	Capillary Pulse.	Venous Pulse.	Hepatic Pulse.	Femoral Snap.	Delayed Arterial Pulse.	Double Femoral Murmur.	Femoral Tones.	
37	N. B.....	Mitral insufficiency.....	+	+	+	—	—	+	—	—	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
38	H. K.....	Aortic stenosis.....	+	—	+	—	—	—	+	+	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
39	L. N.....	Aortic insufficiency.....	+	—	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
40	B. T.....	Aortic insufficiency.....	+	—	+	—	—	—	+	—	—	
		Mitral insufficiency and stenosis	..	..	..	..	..	..	..	..	..	
41	J. K.....	Aortic insufficiency.....	+?	—	—	—	—	—	—	—	—	
		Mitral stenosis.....	..	..	..	..	..	..	..	..	..	
42	J. J.....	Aortic insufficiency.....	+	—	+	—	—	—	—	—	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral stenosis	..	..	..	..	..	..	..	..	..	
43	R. L.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Aortic aneurysm.....	..	..	..	..	..	..	..	..	..	
44	F. M.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
45	J. C.....	Aortic insufficiency.....	+	+	+	—	+	+	—	+	—	
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
46	M. M.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	+	Three tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
47	M. F.....	Aortic insufficiency.....	+	+	+	—	+	+	—	+	+	Two tones
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
48	F. H.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
49	D. G.....	Aortic insufficiency.....	—?	—	—	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
50	S. H.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
51	A. B.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
52	H. Z.....	Aortic insufficiency.....	+	+	+	+	+	+	—	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
53	P. Z.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Pleurisy with effusion.....	..	..	..	..	..	..	..	..	..	
54	F. E.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
55	N. M.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
56	G. C.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	

57	D. L.	Aortic insufficiency	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
58	B. C.	Aortic insufficiency	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
59	J. H.	Aortic insufficiency	+	+	+	+	+	+	—	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
60	E. R.	Aortic insufficiency	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
61	W. E.	Aortic insufficiency	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis	..	..	..	..	..	..	..	..	..	
62	B. N.	Aortic insufficiency	+	+	+	+	—	+	—	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
63	P. M.	Aortic insufficiency	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis	..	..	..	..	..	..	..	..	..	
64	J. C.	Aortic insufficiency	+	+	+	+	—	+	—	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
65	P. S.	Aortic regurgitation	+	+	+	—	—	—	—	+	—	
		Mitral regurgitation	..	..	..	..	..	..	..	..	..	
		Tricuspid regurgitation	..	..	..	..	..	..	..	..	..	
66	A. M.	Aortic insufficiency	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
67	B. T.	Aortic insufficiency	+	—	—	—	—	—	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
68	J. K.	Aortic insufficiency	+	+	+	—	—	—	—	+	—	
		Aortic stenosis	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Mitral stenosis	..	..	..	..	..	..	..	..	..	
69	A. M.	Aortic insufficiency	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
70	G. S.	Aortic insufficiency	+	+	+	—	—	—	—	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
71	O. R.	Aortic insufficiency	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tabes dorsalis	..	..	..	..	..	..	..	..	..	
72	M. D.	Aortic insufficiency	+	+	+	—	—	—	—	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
73	F. D.	Aortic insufficiency	+	+	+	+	+	—	+	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Mitral stenosis	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
74	G. B.	Aortic insufficiency	+	+	+	+	+	+	+	+	+	Two tones.
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency	..	..	..	..	..	..	..	..	..	
75	W. P.	Aortic insufficiency	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	
76	J. C.	Aortic insufficiency	—	—	—	—	—	—	—	—	—	
77	R. W.	Aortic insufficiency	+	—	—	—	—	—	—	+	—	
		Mitral insufficiency	..	..	..	..	..	..	..	..	..	

No.	Name.	Diagnosis.	Collapsing Pulse.	Visible Arterial Pulsation.	Capillary Pulse.	Venous Pulse.	Hepatic Pulse.	Femoral Snap.	Delayed Arterial Pulse.	Double Femoral Murmur.	Femoral Tones.	
78	F. M.....	Aortic insufficiency.....	+	—	+	—	—	—	—	—	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
79	F. M.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
80	N. O.....	Aortic insufficiency.....	+	+	+	+	+	+	+	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
81	C. M.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
82	J. B.....	Aortic insufficiency.....	+	+	+	+	—	—	—	+	+	Two tones.
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
83	J. M.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
84	G. C.....	Aortic insufficiency.....	+	—	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		(Jaundice)										
85	L. H.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		(Dilation aorta)										
86	F. W.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
87	H. G.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Acute pericarditis.....	..	..	..	..	..	..	..	..	..	
88	B. P.....	Aortic aneurysm.....	+?	—	+	—	—	—	—	—	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
89	J. C.....	Aortic insufficiency.....	+	+	—	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
90	G. B.....	Aortic insufficiency.....	+	+	+	—	+	—	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
91	J. K.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
92	A. S.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
93	H. M.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
94	J. R.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
95	E. K.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
96	A. S.....	Aortic insufficiency.....	+	—	+	—	—	—	—	—	—	
		Mitarl insuffic. and stenosis.	..	..	..	..	..	..	..	..	..	
97	J. B.....	Aortic insufficiency.....	+	—	+	—	—	—	—	—	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
98	A. T.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	

99	L. S.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
100	N. K.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
101	W. F.....	Aortic insufficiency.....	+	—	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Chronic myocarditis.....	..	..	..	..	..	..	..	..	..	
		Chronic nephritis.....	..	..	..	..	..	..	..	..	..	
102	L. P.....	Pericarditis with effusion...	+	+	+	—	—	—	+	+	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
103	H. S.....	Aortic insufficiency.....	+	+	+	—	+	—	—	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Tricuspid insufficiency.....	..	..	..	..	..	..	..	..	..	
104	G. H.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
105	F. G.....	Aortic insufficiency.....	+	+	+	—	—	+	..	+	+	Two tones.
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
106	J. B.....	Pericarditis with effusion..	+	+	+	—	—	—	—	+	+	Two tones.
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
107	M. F.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
108	G. W.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Aneurysm	..	..	..	..	..	..	..	..	..	
109	R. H.....	Acute pericarditis.....	+	+	+	—	—	+	+	+	—	
		Aortic insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
110	M. S.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
111	C. B.....	Aortic insufficiency.....	+	+	+	—	—	+	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Mitral stenosis.....	..	..	..	..	..	..	..	..	..	
112	R. B.....	Aortic insufficiency.....	+	+	+	—	—	—	+	+	—	
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral stenosis.....	..	..	..	..	..	..	..	..	..	
		(Chro. inf. endo.)										
113	C. O.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	—	
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
114	R. L.....	Aortic insufficiency.....	+	+	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
115	J. M.....	Aortic insufficiency.....	+	—	+	—	—	+	+	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
		Myocarditis and nephritis..	..	..	..	..	..	..	..	..	..	
116	J. B.....	Aortic insufficiency.....	+	—	+	—	—	—	—	+	—	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	
117	H. C.....	Aortic insufficiency.....	+	+	+	—	—	+	+	+	+	Two tones.
		Aortic stenosis.....	..	..	..	..	..	..	..	..	..	
		Mitral insufficiency.....	..	..	..	..	..	..	..	..	..	

No.	Name.	Diagnosis.	Collapsing Pulse.	Visible Arterial Pulsation.	Capillary Pulse.	Venous Pulse.	Hepatic Pulse.	Femoral Snap.	Delayed Arterial Pulse.	Double Femoral Murmur.	Femoral Tones.
118	B. T.	Acute articular rheumatism.	+	+	+	—	—	—	+	+	+ Two tones.
		Acute tonsillitis	..	..	..	..	..	..	..	..	..
		Rec. acute endocarditis	..	..	..	..	..	..	..	..	..
		Aortic insufficiency	..	..	..	..	..	..	..	..	..
		Mitral insufficiency	..	..	..	..	..	..	..	..	..
		Acute pericarditis	..	..	..	..	..	..	..	..	..
		Pleurisy with effusion	..	..	..	..	..	..	..	..	..
119	V. S.	Aortic insufficiency	—	—	—	—	—	—	—	—	—
		Mitral insufficiency	..	..	..	..	..	..	..	..	..
120	J. C.	Aortic insufficiency	+	+	+	—	—	+	+	+	—
		Mitral insufficiency	..	..	..	..	..	..	..	..	..
121	R. N.	Aortic insufficiency	+	+	+	—	—	+	+	+	—
		Mitral insufficiency	..	..	..	..	..	..	..	..	..
122	D. B.	Aortic insufficiency	+	+	+	—	—	—	+	+	—
		Mitral insufficiency	..	..	..	..	..	..	..	..	..
		Aneurysm	..	..	..	..	..	..	..	..	..
123	J. P.	Aortic insufficiency	+	—	+	—	—	—	—	—	—
		Mitral insufficiency	..	..	..	..	..	..	..	..	..
124	F. R.	Aortic insufficiency	+	+	+	—	—	—	—	+	—
		Mitral insufficiency	..	..	..	..	..	..	..	..	..

SUMMARY

Total No. of Cases.	Collapsing Pulse.	Visible Arterial Pulsation.	Capillary Pulse.	Venous Pulse.	Hepatic Pulse.	Femoral Snap.	Delayed Arterial Pulse.	Double Femoral Murmur.	Femoral Tones.
124	+118, 95%	+95, 76%	+112, 90%	+ 8, 7%	+ 15, 14%	+43, 45%	+50, 48%	+100, 88%	+26, 24%
...	— 5, 5%	—29, 24%	— 12, 10%	—116, 93%	—109, 86%	—81, 65%	—74, 52%	— 24, 12%	—98, 76%

condition, the hydrostatic test, which was determined in most instances, but also as to the presence of cardiac changes, as dilatation and hypertrophy. While admitting the possibility of discrepancy on account of imperfect records, either clinical or post mortem, the possibility of a slight or relative insufficiency from dilatation of the ring without anatomic changes, the findings are as accurate as a careful examination will allow.

The clinical portion of the report consists of the peripheral findings, as indicated, in a series of cases clinically diagnosed aortic insufficiency, such a diagnosis being made on the cardiac and cardiovascular findings, usually after more than one, sometimes several examinations.

The peripheral signs will be considered in the order given in the tabulated findings.

1. The Collapsing Pulse.—In the description of the disease which bears his name, Corrigan directs attention to the character of the pulse which, according to him, constitutes one of the three vascular signs. Since his description the pulse has been variously designated as Corrigan's pulse, water-hammer pulse, collapsing pulse, *pulsus altus et celer,* and the pulse of aortic insufficiency.

The general characteristics of this pulse are too well known to require any detailed description.

According to Corrigan,[1] "the pathologic essence of the disease consists in insufficiency of the valvular apparatus at the mouth of the aorta, in consequence of which the blood sent into the aorta regurgitates into the ventricle.

"Hence, the ascending aorta and arteries arising from it, pouring back a portion of their contained blood, became, after each contraction of the ventricle, flaccid or lessened in their diameter. While they are in this state the ventricle again contracts and impels quickly into these vessels a quantity of blood which suddenly and greatly dilates them."

Broadbent[2] describes the pulse as follows: "The artery at the wrist is large. In the interval between the pulsations it is empty and allows itself to be completely flattened against the bone; then the wave comes with a sudden violent rush, filling the vessel and lifting the fingers forcibly. It is as short as it is sudden, and the artery at once collapses again under the pressure of the fingers. The cause of the collapse is that in consequence of the loss of support of the aortic valves the column of blood is not sustained, and therefore drops out of any vessel which is above the level of the heart in obedience to gravity."

To determine the collapsing character it is therefore necessary to take the precaution to have the examined vessel above the level of the base of the heart. With the patient in bed or in a sitting position, this is usually done unconsciously; but if the patient is standing, or the pulse is examined in a dependent position, the precaution is necessary. This was, apparently, fully appreciated by Corrigan, for to obtain the collapsing character in the lower extremities, the limbs were elevated, while the head of the patient was depressed.

2. Heart Disease, 1906, p. 127.

The diagnostic importance of the pulse is expressed by Broadbent,[2] for he says: "The collapsing character of the pulse is indispensable as an evidence of aortic regurgitation, though certain complications may interfere with the degree of collapse.

"The degree of collapse in the pulse is an important factor in the estimation of the amount of the regurgitation. The greater the regurgitation, the more pronounced will be the collapsing character of the pulse. In the absence of any marked collapse in the pulse, a diastolic murmur, whatever its character, would not indicate any serious degree of incompetence."

The absence of the collapsing pulse, in the presence of cardiac signs of aortic insufficiency, has been accounted for by the faulty technic in examining the pulse and making sphygmographic tracings or because of some complication. Of the conditions which may interfere with the collapse, there may be mentioned:

First. An associated aortic stenosis of such a degree and character as to allow a regurgitation but without producing a collapse.

Second. When the insufficiency is of the arteriosclerotic type, usually occurring in the aged. The amount of insufficiency is generally slight and the vessels are stiff and rigid, which interferes with their sudden distention and collapse.

Third. In the stage of decompensation there may be such a marked reduction of ventricular force as to fail to produce the collapse.

While these factors may interfere with or prevent the occurrence of the collapsing pulse, in not a few instances of uncomplicated aortic insufficiency, the collapse is absent. To determine definitely the character of a pulse, a sphygmographic tracing is indispensable. According to Mackenzie and Broadbent, the greater part of the collapse in a normal pulse occurs after the dicrotic notch, while in aortic insufficiency before the notch. If the dicrotic notch is above the midline between the apex and base of the pulse wave, the pulse is not collapsing, but if the notch is below the midline, the pulse is collapsing.

Since Corrigan's description the collapse has been accepted as diastolic in the cardiac cycle and due to the lack of support of the aortic valves, although Clifford Allbutt directs attention to the dilated and elongated arteries as a factor, and Gibson considers the comparative emptiness of the arteries as essential.

More recently Stewart[3] has investigated experimentally and clinically the cause of the collapse and many of his findings are quite revolutionary. He has confirmed the findings of Henderson in reference to the pressure in the carotid artery and ventricle by means of simultaneous tracings, which demonstrates that the fall of pressure in the artery is systolic and not diastolic. Furthermore, he has determined that the amount of systolic output is usually increased only about 0.5 c.c., and even in extensive injury to the valves the amount did not exceed 1 c.c. of blood.

This finding is absolutely opposed to the usual conception of the amount of regurgitated blood, but it must be remembered that the flow

3. Arch. Int. Med., I, No. 1, 102.

of blood from the auricle is extremely rapid, and the ventricle is filled, raising the intraventricular pressure to such a point as to interfere with the comparatively small flow from the aorta. Another factor of importance in maintaining a nearly normal systolic output is the muscular tonus of the ventricle, which determines, in great part, the degree of distention and the amount of residual blood. As the intravascular pressure rapidly increases, while the aortic diastolic decreases, the two soon become equal or nearly so, and as a result there is little or no flow in the latter part of diastole from the aorta into the ventricle. Accepting, then, these findings, the systolic fall in the arterial pressure and the comparatively small amount of regurgitated blood, it becomes evident that the collapsing character of the pulse is not to be explained on the incompetency of the aortic valves, but must be produced by some other means. It has been determined, experimentally and clinically, that the rapidity of the capillary escape, which is controlled by the vasomotor mechanism, is responsible for the collapsing character. In aortic insufficiency there is produced not only a mechanical dilatation of the arteries but also a vasomotor dilatation of the arterioles and capillaries. This change is due in great part to a reflex inhibition of the vasomotor center, resulting from the stimulation produced by the increased intravascular pressure. If, for any reason, cardiac or vascular, no vasomotor dilatation occurs, an aortic insufficiency may exist without a collapsing pulse. The converse is equally true, namely, that a vasomotor dilatation unassociated with an aortic insufficiency may produce a collapsing pulse.

In unsuccessful attempts by Stewart, as determined later by post mortem, to produce experimental insufficiency, the pulse tracings for a period of about one hour were typically collapsing in character and later became perfectly normal. The valvulotome in these experiments failed to divide one of the cusps, but entered the ventricle, producing irritation of the reflex nerve, resulting in a vasomotor dilatation.

Conclusions as to clinical significance:

First. The typical collapsing pulse *per se* is not pathognomonic of aortic insufficiency.

Second. That the collapsing character is not due directly to the amount of regurgitated blood, but is the result of a vasomotor dilatation.

Third. Aortic insufficiency may exist without a collapsing pulse.

Fourth. A typical collapsing pulse may occur with perfectly normal and competent aortic valves, as is not infrequently observed in exophthalmic goiter and other diseases with vasomotor dilatation.

Fifth. The degree of the collapse of the pulse in an aortic insufficiency is no indication of the amount of regurgitated blood or the extent of the valvular defect.

2. Violent Arterial Pulsation.—This condition was first observed by Vieussens[4] and later by Corrigan.[1] It constituted one of the three vascular signs described by Corrigan as follows:

"When a patient affected by the disease is stripped, the arterial trunks of the head, neck and superior extremities immediately catch the eye by

4. Quoted from Huchard: Mal. du cœur, 3d ed., Paris, 1905, 111.

their singular pulsation. At each diastole the subclavian, carotid, temporal, brachial and in some cases even the palmar arteries, are suddenly thrown from their bed, bounding up under the skin. From its singular and striking appearance, the name of visible pulsation is given to the beating of the arteries."

Frequently the condition is so pronounced that the diagnosis of aortic insufficiency is made involuntarily. The quick pulsations in the carotids are often referred to as the hopping carotids and when present in the general vessels, as the *danse des artéres*. When the pulsations become particularly violent, there is not only a marked arterial pulsation, but the entire body of the patient and even his bed are shaken with each systole.

F. Müller[5] has described a visible pulsation of the uvula and Becker[6] a similar condition of the retinal arteries.

With the occurrence of an aortic insufficiency, the arteries become elongated, tortuous and dilated, so that the pulsations produce a distinct vermicular character, designated as the locomotive pulse.

The violent arterial pulsations result from the same conditions producing the collapsing pulse, the vasomotor dilatation playing an important rôle.

Conclusions as to clinical significance:

First. Violent arterial pulsations, while very suggestive, are not pathognomonic of aortic insufficiency.

Second. The chief factor in their production consists of the arterial and capillary changes; the aortic valves may be normal and competent.

Third. Violent arterial pulsations are observed clinically in pseudo-aortic insufficiency of Lennhoff, v. Weissmayer[7] and Huber,[8] in exophthalmic goiter and other diseases associated with a high pulse pressure.

3. The Capillary Pulse.—The visible pulsation of the capillaries in aortic insufficiency was described by Quincke,[9] and is usually referred to as the Quincke pulse. Its presence may be determined by the following methods:

First. Perhaps the most convenient one is to make a slight amount of pressure over the free end of one of the finger-nails, producing an anemic area beneath the nail, the border of which, or the entire area, will become alternately anemic and hyperemic with each cardiac pulsation.

Second. By producing an area or line of hyperemia, over the skin of the forehead, by slight friction by means of a finger-nail, the bell of the stethoscope, or any other blunt object. This hyperemic area is seen to flush and pale, often best observed at a slight distance.

Third. Pressure on the mucous membrane of the everted lower lip, by means of a microscope slide, watch crystal or any transparent object will produce the same phenomenon.

When the capillary pulsation is pronounced, and in good light, it is possible to detect its presence on mere inspection of the face or hands, which is particularly true if moist from perspiration. One of the cases

5. Charité-Ann., Berl., 1889, p. 251.
6. Monatsschr. f. Augenheilk., 1870.
7. Ztschr. f. klin. Med., Berl., 197, xxxii, 29.
8. Berl. klin. Wchnschr., 1898.
9. Berl. klin. Wchnschr., 1868.

in the clinical group presented so pronounced a capillary pulse that it could be distinctly seen across the ward. Quincke has described a capillary pulse occurring in the retinal arteries.

Under normal conditions the flow in the capillaries is smooth and continuous, without any pulsation. This constant, uninterrupted flow depends on the following factors:

First. The vasomotor resistance.

Second. Regular, forcible contraction of the heart.

Third. Elasticity of the arterial walls.

Fourth. The volume of the circulatory blood.

A marked variation from the normal of any one of these factors is capable of producing a capillary pulse that is visible and palpable. Experimental and clinical determinations indicate that the capillary pulse occurs most frequently as a result of disturbances of the vasomotor resistance and loss of elasticity of the arteries, although in certain instances all four factors may be present. The phenomenon may be produced or checked by administering vasomotor dilators or constrictors, regardless of the presence or absence of an aortic insufficiency.

Conclusions as to clinical significance:

First. The capillary pulse is not pathognomonic of aortic insufficiency.

Second. Its presence depends on a disturbance of the capillary flow, in most instances a vasomotor dilatation and loss of the arterial elasticity.

Third. The capillary pulse is a frequent finding in all diseases associated with a toxemia, as pneumonia, sepsis and typhoid; in nervous disturbances, as hysteria and neurasthenia; in arterial diseases, as arteriosclerosis, or it may occur in exophthalmic goiter. It is not a rare finding in apparently perfectly healthy individuals, particularly after the use of coffee, tea, tobacco or alcoholics.

4. Venous Pulse.—A centripetal venous pulse is occasionally observed in aortic insufficiency, differing entirely from the quick arterial pulsation or the momentary flush of the capillary pulse. It is best observed on the dorsum of the hand, held in a dependent position; the pulsation is slow and deliberate, advancing centrally from the periphery. This venous pulse becomes possible whenever the arterioles and capillaries are dilated, permitting a direct transmission of the arterial pulse wave to the veins. While occasionally associated with an aortic insufficiency, it may also occur in other diseases, when the capillary resistance is reduced and the pulse-pressure increased. A most pronounced centripetal venous pulse has frequently been found in exophthalmic goiter.

5. Hepatic Pulse.—A true liver pulsation may occur either from the sudden arterial filling, the transmitted arterial pulse to the liver, or it may present the more frequent positive venous pulsation due to a tricuspid insufficiency. A differential determination is not always easy, but may be made when the liver pulsation is unaccompanied by a positive jugular pulse and the cardiac signs of a tricuspid leak.

6. Femoral Snap.—On auscultating over the femoral artery a distinct accentuation of the femoral sound is heard. Quite frequently it is most intense and is then known as the pistol shot. It is probably produced by

the vibrations resulting from the sudden and violent distention of the vessel by the onward rushing arterial wave. As a rule, the more pronounced the collapsing pulse, the visible arterial pulsations and the capillary pulse, the greater the degree of the femoral snap. While designated as the femoral snap, the same phenomenon may be obtained by auscultating over an artery in other locations; it may be heard in the palm of the hand or even in a finger-tip by using the stethoscope with the bell removed.

7. Delayed Arterial Pulse.—The evidence on the cardio-carotid or cardio-radial interval is quite conflicting.

Henderson[10] was of the opinion that the interval between the heart's impulse and the arterial pulse was prolonged in aortic insufficiency.

Austin Flint[11] was of the same opinion, for he says: "That it characterizes certain cases in which the regurgitation is excessive is not to be denied."

The careful clinical observations of Walshe[12] led him to the conclusion that "The retardation may with care be detected in many, but unquestionably not in all, cases of that disease."

Sir William Broadbent vigorously maintained and supported the occurrence of a delay. To quote him: "The pulse in aortic regurgitation is always retarded or delayed; that is, there is an appreciable interval between the beat of the heart or the carotid pulse and the pulsations in the radial artery which varies according to the extent of the incompetency."

A number of equally competent authorities are diametrically opposed to the foregoing observations.

Clifford Allbutt[13] in discussing the point says: " . . . for the closer my attention the less could I detect of the alleged peripheral pulse delay."

As most of the preceding statements are based on mere unaided clinical observations, the conclusions as determined by means of the sphygmograph are indispensable.

Mackenzie says:[13] "I have taken an enormous number of tracings of radial, carotid and apex beats in aortic regurgitation and have never in any single case detected radial delay." These findings are confirmed by François-Franck, d'Espine, Chapman and others. Even Broadbent admits he was unable to detect any delay in the carotid-radial pulse.

With all due regard it must be admitted that a delay is the logical conclusion and the discrepancy may be found in the variability of the pathologic varieties of aortic insufficiency, the associated arterial changes and the presence of complications. If a mitral insufficiency or a myocarditis coexists, it is apparent that a prompt and efficient emptying of the ventricle may not occur and interfere with the production of the wave.

8. The Double Femoral Murmur.—A double murmur over the course of the aorta was described by Corrigan as one of the three vascular signs of aortic insufficiency, which must not be confused with the double

10. Quoted from Chapman: Lancet, 1898, ii, 20.
11. Diseases of the Heart, 2d ed., 1870, Phila., 158.
12. Diseases of the Heart, 1862.
13. System of Med., 1909 vol. vi, p. 460.

femoral murmur, for the two are separate and distinct. The latter is an artificially produced sign, while the former results from a double aortic lesion or an aortic insufficiency with changes in the aortic wall or its intima. The presence of a double murmur in the femoral artery was first noticed by Bouillaud, but described by his pupil, Duroziez,[14] and is usually designated as Duroziez's sign or murmur.

It is elicited by compressing the femoral artery against the underlying bone by gradually increasing pressure with the stethoscope. It is best to first accurately locate the position of the vessel by palpation and then make slight pressure with the stethoscope, when a systolic murmur will be heard, which is a perfectly normal finding. As the pressure is gradually increased, the diastolic murmur is produced, the presence of which, with the systolic murmur, constitutes Duroziez's sign. If at any time the pressure is of such a degree as to obliterate the systolic murmur, without producing the diastolic, the amount of pressure will be excessive and the vessel must be released and the procedure repeated.

Potain directs that pressure be made on the artery by the edge of the stethoscope which is farther from the heart, in order that the diastolic fluid veins or eddies, thus produced, may pass under the bell of the instrument. While designated as the double femoral murmur or Duroziez's sign, the same phenomenon may be obtained by pressure over any of the larger arteries, as the subclavian, axillary, brachial, popliteal and even the radial. As to the mode of its production, as already stated, it is an artificially produced sign, resulting from the narrowing of the arterial channel by pressure, so that fluid veins or eddies occur as the blood passes and repasses the point of construction.

The systolic portion of the murmur is easily explained on a perfectly normal basis; the diastolic portion, however, involves the same factors considered in the production of the collapsing pulse. A backward flow of blood is absolutely essential for the production of the diastolic murmur, but the amount of blood that regurgitates from the aorta into the ventricle, is not the chief factor, for the phenomenon can be present in other conditions unassociated with aortic insufficiency. Here, again, a disturbance of the peripheral resistance with an increase in the pulse-pressure is the determining factor.

Although Balfour[15] goes so far as to say: " . . . , for I have no hesitation in saying that a true ventricular diastolic murmur is never heard in the arteries unless aortic incompetence exists," Duroziez says it is also heard in cases of enteric fever, chlorosis and lead poisoning. It may also be heard in exophthalmic goiter, arteriosclerosis, in pseudo-aortic insufficiency and other diseases associated with a backward flow of blood. On the other hand, many cases of aortic insufficiency are not associated with this phenomenon.

Conclusions as to clinical significance:

First. The double femoral murmur *per se* is not pathognomonic of aortic insufficiency.

14. Arch. Gen. de Med., April, 1861.
15. Clin. Lec. on Dis. of the Heart and Aorta, 3d ed., London, 1898, 66.

Second. It is an artificially produced phenomenon.

Third. The essential portion of the phenomenon, the cardio-diastolic or arterio-diastolic, results from the backward flow of blood, produced chiefly by the vasomotor dilatation.

Fourth. Aortic insufficiency may exist without a double femoral murmur.

Fifth. The phenomenon is observed in other diseases, with perfectly normal and competent aortic valves.

9. Femoral Tones.—Traube[16] has directed attention to the presence of a double tone, on auscultating over the femoral artery, in extreme cases of aortic insufficiency. To obtain this, no pressure is to be made; the stethoscope is simply to rest in contact with the skin. Traube believed the tones to be due to the sudden distention and collapse of the artery and indicating aortic insufficiency.

That Traube's explanation and conclusions are false, has been amply demonstrated by Friedreich,[17] Balfour[15] and others.

On auscultating over the femoral, not only two but frequently three tones may be heard, one of which, always the last, is relatively accentuated. If slight pressure be made, the systolic portion of a Duroziez is produced, which coincides in point of time with the accentuated portion of Traube's tones, thus demonstrating that at least a part of the phenomenon precedes the arterial distention. This means that the tones, in part, are probably produced in the vein by closure of the venous valves, and indicate not an aortic insufficiency, but a tricuspid insufficiency.

From the foregoing considerations of the peripheral findings the following conclusions become evident:

First. As a means of diagnosis, the peripheral signs are highly suggestive, but are not pathognomonic of aortic insufficiency.

Second. If associated with a cardiac hypertrophy and dilatation, even in the absence of a diastolic murmur, the existence of an insufficiency becomes most probable. In several instances, with marked dyspnea and loud râles, no murmur could be detected, but the probable diagnosis of an aortic insufficiency was made and later confirmed by section.

Third. The peripheral signs may be entirely absent in aortic insufficiency, when the diagnosis must be made on the cardiac findings.

Fourth. The peripheral findings may be of the greatest assistance in a differential diagnosis. A diastolic murmur over the base of the heart, particularly in the pulmonic area, in the absence of vascular signs, will indicate a pulmonary insufficiency; with the presence of vascular signs, will indicate aortic insufficiency.

Fifth. The peripheral signs, as a means of estimating the degree of the lesion, are of no assistance.

Sixth. Any or all of the arteriovenous signs of aortic insufficiency may occur with perfectly normal and competent aortic valves. Such may be the condition in pseudoaortic insufficiency, arteriosclerotic disease, in exophthalmic goiter, in vasomotor dilatation from any cause or where

16. Gesam. Beit. zur Path. und Physiol., vol. i, S. 793.
17. Deutsch. Arch. f. klin. Med., vol. xxi, S. 205.

there is an abnormal leak of arterial blood. In one instance, included in the post-mortem records, the clinical diagnosis was aortic insufficiency, with the most pronounced peripheral findings, but the section revealed the presence of a very small intrapericardial aortic aneurysm, with rupture into the pericardium. In another instance, not included in this series, with pronounced peripheral signs, the clinical diagnosis confirmed by section was aortic aneurysm with rupture into the superior vena cava.

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ARTERIOSCLEROSIS *

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In this age of excitement and of nervous exhaustion, in the attempt to imitate the birds of the air and of rapid transit by steam, gasoline and electricity, and by so doing try to accomplish unheard of feats, and also to crowd a year's work or pleasure into a few hours of time, it may be well for the medical profession to pause for a moment and consider the advisability of sounding a note of warning to reckless humanity in their madness, instead of joining and following this vast and excitable throng to a hasty dissolution of the body before the age of former maturity. It can be proved that dissipation of the various kinds produces arteriosclerosis more often in the young than diseases, excepting those which follow dissipation. It is true that a certain progressive change takes place in the arteries from early childhood to old age, but we should not find in the man of 30 years a condition of arteriosclerosis which belongs rightfully to the octogenarian.

Thayer tells us that at birth the artery is delicate, translucent, extremely thin and collapsing, and which on opening is perfectly smooth. The intima consists of a single endothelial layer lying directly on the surface of a deeply undulating elastic interna; the media, which consists of transversely arranged smooth muscle-fibers with rather large vesicular nuclei, has a depth of seven or eight layers of cells. Connective tissue if present in the intima and media is extremely scanty, none being revealed by the Mallory or Van Gieson stains. There is, however, a relatively large amount of elastic tissue which appears on cross-section as very thin, parallel, slightly wavy lines. The elastica externa is neither as coarse nor as deeply undulating as the interna. The adventitia, considerably thicker than the media, consists of compact connective tissue fibers with relatively large nuclei, and the elastic fibers are fairly numerous. By the middle of the first decade the intima has become thicker, owing to the appearance of a fresh layer of elastic interna, while more muscle fibers appear in the media. From the tenth to the twentieth year the walls of the vessels become thicker but still collapse; the intima and media are thicker, the elastic tissue being relatively less marked. From

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twenty to forty slight general further thickening of intima and media occurs, a second elastic layer appears in the intima, and in the media the connective tissue begins to be demonstrable by Von Gieson stain. From forty to fifty years decided changes occur; the lumen of the vessels remains open, areas of calcification in the deep layers of the intima are frequent; the media reaches the maximum thickness; there is a good deal of connective tissue. After the fifth decade there is a progressive increase in the thickness of the intima and a diffuse connective tissue thickening becomes the common type. The media after the fifth decade becomes on the whole thinner and there is a marked increase in the connective tissue. Calcification in the deep layers of the intima becomes more common with age, four out of five cases in the eighth and ninth decades showing the change.

Arteriosclerosis, according to some writers, is characterized by the occurrence of changes in and thickening of the intima which was supposed to be due to the depositing of cells directly from the blood stream. Other writers claim it to be a true inflammatory hyperplasia as the result of some formative stimulus; still others, to be a compensatory thickening of the walls in order to diminish the lumen of the vessels after the stretching which occurred under the increased blood-pressure with which it was usually associated. Jores, on the other hand, regards this as a true hyperplasia resulting from the high blood-pressure, but independent of the lumen of the vessels. These observers consider the changes in the intima as primary, and neglect the second important change which characterizes arteriosclerosis, namely, inflammatory changes within the media.

Koster, after a very careful study of the inflammatory process by means of serial sections and injected specimens, calls attention to the importance of degenerative and calcareous changes in the media and adventitia as well as in the intima. He claims that the arteriosclerosis lesion always takes its origin in the adventitia as an infiltration surrounding the vasa vasorum like a sleeve and this infiltration followed the vasa vasorum into the media. He found that in the normal artery the vasa vasorum do not pass deeper than the outer third of the media. In certain arteries, however, notably those of the brain and lungs, there was a fine capillary network penetrating the deeper layers of the media as well and spreading along the media surface of the elastic interna. Ebner confirms this view by stating that the media of the larger arteries and veins contain blood-vessels, though in small numbers and only in the external layers; whereas the inner layers of the media and intima seem to be always free from vessels.

If the above theory be true it must also be true that the infiltration about the vasa vasorum follows these paths and sets up an area of infiltrating necrosis and calcification in the smooth muscles and elastic fibers of the media. When it penetrates to the elastic interna a small area is first injured, the inflammation acts as a stimulus, and hyperplasia of the intima sets in, the intima becomes thickened until it undergoes spontaneous fatty degeneration, after which they either calcify or the capillary

network penetrates through the elastic interna and a true process of organization and proliferation of connective tissue goes on.

It is said that the number and size of the vasa vasorum and the richness of the capillary network are always increased in arteriosclerosis and phlebosclerosis. Endarteritis occurs only in arteries that have vasa vasorum, that is, in the larger arteries and in the smaller arteries of the brain and lungs.

The lesions of arteriosclerosis have been classified as follows:

1. Where the adventitia is chiefly affected and the arterial wall not weakened. In this class it may be localized or produce nodular infiltration. Again infiltration may be diffused about the vasa vasorum, producing inflammatory thickened arteries, giving the sensation of thick rubber tubing.

2. Another class is where the lesions of the media predominate, producing a weakening of the arterial wall, very common in syphilis. Under this class we find localized necrosis of elastic tissue with calcification known as atheroma, and pipe-stem or goose-neck arteries. Again under this class is found diffused or patchy medial fibrosis with more or less calcification, often leading to aneurysm.

3. A third class is where changes in the intima predominate without weakening the arterial wall. First, we find hyperplasia of intima with fatty degeneration at its center, producing aortitis; with calcification of the area of fatty degeneration producing atheromatous ulcer and endarteritis deformans. Second, under this class we find simple hyperplasia of intima, diffuse endarteritis. Third is found obliterative endarteritis in which the process is still more chronic and intense and capillaries enter from the vasa vasorum.

Peri-arteritis nodusa, according to Kussmaul, is one of the rare forms of arteriosclerosis, produced by the formation of small areas of nodular infiltrations in the adventitia. It gives the vessels a nodular appearance and consistency and is associated with inflammatory changes of the media and a local proliferative endarteritis. In diffuse peri-arteritis is found the thickening of the adventitia more commonly occurring about the arteries of the brain and coronary arteries in myocarditis, also common in the radial. The uniformly thickened arteries which are so commonly met with in the young or middle-aged persons who do hard work are of this type. Whether such changes are permanent or transitory has not been settled as yet.

The rigid pipe-stem form of arteriosclerosis of the radial arteries of old persons is produced by the presence of areas of degeneration and calcification within the tunica media. This condition occurs without any changes in the intima, and is the type of arteriosclerosis found in animals with bacterial toxins, acids, adrenalin and alkaloids, according to Monckeberg.

According to Klotz, Wells and others calcification is produced as a result of inflammatory changes, the muscle-cells degenerate and the lecithins become split up into fatty acids, glycerophosphoric acid and cholin, causing the appearance of fatty degeneration. The calcium and magne-

sium in the serum then enter into combination with the phosphoric acid and are precipitated to form calcareous granules in the media. Baldauf finds that most of the calcium is in the form of phosphate and sulphate and very little as carbonate.

Klots finds that the calcium is by no means always deposited in the patches of atheroma, but exists also as rows of fine granules between the muscle-fibers. In this condition it causes a slight increase in the rigidity of the artery. When the necrosis of the artery wall proceeds more slowly, the phosphoric acid or glycerophosphoric acid derived from the lecithin is removed by the blood-vessels that are in the capillaries of the vasa vasorum which enter the diseased area of the media, and the injured elastic tissue is replaced by fibrous tissue without the deposition of calcium; but whether the calcium is deposited or not, the area of diseased media constitutes a weakened portion of the wall and is the lesion which in the large arteries is particularly responsible for aneurysm formation.

Virchow and Thoma believe that the fundamental lesion in arteriosclerosis is thickening of the intima; that some formative stimulus produces inflammatory hyperplasia within the blood stream; that this stimulus was the mechanical factor of high blood-pressure, and that the thickening of the intima represented a compensatory hypertrophy to prevent aneurysm dilatation. Others believe that the formative stimulus is chemical and not mechanical.

It may be unwise to state positively the direct cause of arteriosclerosis, since the patient may have had a number of diseases, any of which may produce arteriosclerosis. A man may have worked from youth to old age; he may have had syphilis, typhoid fever, rheumatism and drank alcohol, all or any of which may produce arteriosclerosis.

Thayer and Brush examined carefully the radial artery of 4,000 cases admitted to the Johns Hopkins Hospital, and found arteriosclerosis in the following percentage to exist in those under 50 years: hard work, 57.5; alcohol, 46.8; rheumatism, 34; typhoid fever, 26; malaria, 20; diphtheria and pneumonia, both 17; scarlet fever, 16.

Fahr performed autopsies on 309 habitual drunkards and found arteriosclerosis changes no more common than in abstemious individuals. Syphilis is one of the chief causes of arteriosclerosis, especially below the age of 35. Other causes are lead poisoning, chronic nephritis, overeating, gout, anger, intense excitement of any kind, overwork, mental or physical, in fact any condition that may produce high blood-pressure. Heredity is said by Osler to be a strong factor. Entire families show a tendency to arteriosclerosis which cannot be explained in any other way. Emerson found that drinking alcohol was more apt to produce arteriosclerosis in the offspring and thereby shorten the life of the children than of the individual himself. Inhaling tobacco smoke, especially from cigarettes, is probably one of the most dangerous factors in producing arteriosclerosis of the present age, the smoke entering the heart directly from the pulmonary circulation. The nicotin entering the lungs strikes its first blow at the coronary arteries and base of the aorta, where the elastic fibers are under the greatest tension and hence most liable to degenerate. The cigarette habit indulged in so universally to-day leads by far all other

agencies combined in undermining and weakening the heart, brain and the general constitution and usefulness of the youths who are so soon to take our places on the stage of action. This weakened condition is, of course, in direct proportion to the powers of resistance of the individual. Should this habit increase as rapidly in future years as it has during the past few years, I believe it would be justifiable to prophesy that before the close of this century we will be a nation of weaklings, governed either by strong-minded women or a stronger foreign nation.

If the physicians instead of practicing this dangerous habit would unite in its overthrow, as we are united against tuberculosis, after years of patient effort we might succeed in convincing the younger generation of the great danger of this habit.

Aubertine and others have found hyperplasia of the adrenals present in many experimental and clinical conditions in which hypertrophy of the heart and high blood-pressure are present. Therefore in the light of these findings it seems quite probable that hypertrophy of the heart and arteriosclerosis may often be the result of a hypersecretion of adrenalin.

Harlow Brooks has given the following statistics as to distribution of arteriosclerosis lesions in 4,000 autopsies: aorta, 301; visceral trunks, 368; coronary arteries, 270; brain, 132; renal, 81; pancreas, 74; hepatic, 43; splenic, 35; spinal, 120.

The manifestations of arteriosclerosis are almost innumerable. We will name a few but time will forbid a description: cardiac, associated with myocarditis and coronary sclerosis; simple coronary sclerosis; angina pectoris, Adams-Stokes' syndrome, tachycardia, paroxysmal dyspnea, cerebral symptoms, aneurysm, pain in abdomen, pain in arms and legs, nervousness, insomnia, transient irrationality, numbness of feet, legs and hands, and many other symptoms may be traced to arteriosclerosis.

It should be borne in mind that because we do not find the radial artery sclerosed this is no reason that it does not exist in other arteries. We have not the time to dwell on the treatment. Potassium iodid perhaps has a greater following than any other medicine. A patient with arteriosclerosis should be given to understand that more depends on his mode of living and habits than on medicine. A quiet life, avoiding all excesses and excitement, anger especially, the inhaling of tobacco smoke from cigarettes, a light diet, never overeating, a strictly temperate life in all things, will assist Nature toward the desired normal condition.

PREVENTION OF BLINDNESS*

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It has been said by some one that "preventives of evil are far better than remedies; cheaper and easier of application and surer in result."

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Efforts which have been more or less successful have been put forth to prevent crime, immorality, accidents, pain, etc., but until a comparatively recent date very little has been done to guard against that most deplorable and dreaded of all infirmities, blindness, the number of whose victims has continued to increase from year to year.

Of the blind people of the world it can be safely said that over 40 per cent. are unnecessarily deprived of their sight as a result of ignorance, neglect and carelessness. Such an assertion is borne out by facts, and this in an age whose watchword is prevention.

Preventable blindness is due to numerous and varied causes, among them being: industrial accidents; accident at play; Fourth of July celebrations; sequelæ of some of the infectious diseases; wood alcohol; sympathetic inflammation; syphilis, hereditary and acquired; progressive near-sightedness; eye-strain of various kinds, particularly among school children, and ophthalmia neonatorum.

It is incumbent on those who desire to ameliorate the conditions of a struggling humanity to investigate and eliminate any administrative fault, any kind of neglect, any form of abuse, which may justly be cited as the cause for a single case of unnecessary blindness. Surely any cause which results in such deprivation to a single human being merits the most careful investigation, with a view to such complete elimination that no person will be deprived of the light and find himself in a world of unnecessary darkness.

The first steps have been taken toward suppressing one cause of blindness, namely, ophthalmia neonatorum, which for years resulted in more blindness, with the exception of optic-nerve atrophy, than any other local affection. The micrococcus of gonorrhea is responsible for approximately two-thirds of all the cases of ophthalmia neonatorum, this microorganism being readily found in the discharges resulting from the infection, especially in the more severe and complicated forms. Various microorganisms, such as pneumococcus, Koch-Weeks bacillus, Morax Axenfeld diplobacillus, streptococcus, etc., are responsible for the other third, these cases representing the milder and less dangerous to sight types of the inflammation.

The necessity of an early and exact diagnosis is important. This necessitates a bacterioscopic examination of the secretion from the inflamed conjunctiva. Unless the conjunctival inflammation be due to the gonococci, the cornea is rarely affected. Although it is true that almost all severe cases of ophthalmia neonatorum are due to the gonococcus, it does not necessarily follow that every case in which gonococci are found will be a severe form of the disease. Even in the mildest forms complications may develop at almost any moment. On the contrary, what sometimes appears from all clinical appearances to be gonorrheal ophthalmia, sometimes turns out on bacteriologic examination to be due to some other microorganism. The type of inflammation is milder and generally responds quickly and readily to treatment. Complications are seldom present and the cornea is rarely affected. The baby's eyes may become infected

1. Before the act of birth, while in the uterus.
2. During the act of birth.
3. Almost immediately after birth.
4. One or several days after birth.

In most cases infection takes place immediately after birth; the morbid secretion collected around the eyelids during the act of birth is carried into the conjunctival sac after the child is born, by the winking of the eyelids, by the fingers of the infant or attendants, or by towels and other materials used to wash the child. This is the period at which great care should be exercised and every precaution taken to guard against infection. A baby normally passes through the vagina with eyelids closed, sealed with the vernix caseosa, so that it is scarcely possible for any secretion, morbid or otherwise, to penetrate between the lids and cause infection. Such infection, however, might occur during face presentations, the applications of forceps, or during digital explorations on the part of the physician.

Symptoms.—The first signs of infection usually make their appearance in one to three days after birth. One eye is usually affected first, the other soon following. One of the earliest signs of infection is that of Billard, which is a narrow, transverse red line appearing in the center of the upper lid. This is soon followed by a slight swelling of and redness along the edges of the lids and the appearance of thin mucopurulent discharge exudating from between the lids. The lids quickly become red, hot, swollen and tense, the upper lid often overhanging the lower. Owing to the secretion, which becomes thick and yellow with frequently a greenish tinge, the lids are with difficulty separated and everted. Many times a thin grayish membrane forms on their under surface. The everted lid shows the conjunctiva to be thickened and vascular. The ocular conjunctiva is red and chemotic, but not so swollen as to overlap the cornea, as in the gonorrheal ophthalmia of adults. If the case is not given immediate attention, the cornea may become opaque and ulcers develop, eventually ending in corneal perforation. Exceeding care should be exercised in separating the lids so that the eye-ball may not be subjected to a pressure which increases the danger of perforation of the cornea. When this occurs, the iris prolapses and an anterior staphyloma begins, resulting in the loss of sight. In still fewer cases the sight is quickly destroyed from septic inflammation of its interior.

Treatment.—After the disease has manifested itself, the treatment consists in the vigilant practice of cleanliness, the destruction of the noxious germ and the subduing of the inflammation. The inflamed eyes should be kept free from pus by frequent and gentle irrigation with warm antiseptic solution. This treatment given every half hour is not too frequent. It is necessary to exercise gentleness in these treatments, for force might injure the cornea. Hot applications should be applied at least every hour. The destruction of the microorganism is best accomplished by means of nitrate of silver solution to be applied to the everted lids in a 2 per cent. solution at least once daily, and the excess washed off with either saline solution or plain water.

Nitrate of silver is more valuable than any of the new preparations of the silver salts, such as protargol, argyrol, etc. It is well, however, to use these to supplement the nitrate of silver. If the cornea becomes infected, atropin should be instilled in 0.5 to 1 per cent. solution, and any ulcers present may be cauterized. All cloths, etc., used for bathing the lids should be burned immediately after use. All persons brought in contact with the infant should be warned of the danger from possible infection.

Prevention.—It is generally recognized throughout the world that infection of the eyes of new-born children by a purulent inflammation caused by one of several microorganisms is one of the chief causes of blindness. Previous to 1881 the children born had their eyes so frequently infected with a purulent inflammation, which was disastrous to sight in such a large percentage of cases, that investigators had been endeavoring from time immemorial to find some remedy that would prevent infection. Literature abounds with remedies innumerable. In the early part of the last century efforts were made to find some method of preventing the disease by first removing the disease in the mother during pregnancy, and if this was not successful to get rid of as much discharge as possible from the vagina during the birth of the child, and to thoroughly cleanse the eyes of the child immediately after delivery with a solution capable of destroying the action of the discharge. This was more or less the line of procedure followed by the majority of men, a variety of prophylactic measures being recommended, among them being chlorin water, salicylic acid, thymol, potassium permanganate, benzoic acid, tannin, iodoform, carbolic acid and various other remedies too numerous to mention, each having its advocate as a means of preventing infection. All observers were united in one point: that whatever procedures were adopted they should be used the instant the head was born and before the baby had time to open his eyes. Nothing seemed to avail until in the year 1881 Prof. Carl Credé of Leipsic, after many a careful and scientific investigation, gave to the world a prophylactic the use of which has been the means of diminishing the number of infections in the eyes of new-born babes, and saving thousands of them from passing their days in darkness. His treatment consisted of a single drop of a 2 per cent. solution of silver nitrate, simply dropped into the baby's eyes as soon as convenient after birth.

The details of the method which Credé used are important and also interesting. After various experiments with different antiseptics, the eyes of all new-born children in the clinic were cleaned immediately after birth with ordinary water and then disinfected by means of the silver nitrate solution. After the assistant had gently separated the eyelids a single drop of the solution was placed in the eye by means of a glass rod. For twenty-four hours after the application, the eyes were cooled by means of a linen fold soaked in a 2 per cent. solution of salicylic acid laid over them. Babies undergoing such treatment were saved from ophthalmia, notwithstanding the fact that many of the mothers were evidently suffering from blennorrhea. Not infrequently the eyes became

somewhat congested, accompanied occasionally by a slight discharge after the use of the silver drops, but this subsided with appropriate treatment and was never serious.

That Credé's plan was successful is evident as the percentage of cases of ophthalmia in the Leipsic clinic declined from an average of 10.75 per cent. in the seven years to 0.5 per cent. in 1880. A still more convincing testimony to the success of Credé's procedure is the overwhelming fact that during the three years following this discovery, there was only one case of ophthalmia among 1,160 children born alive. Throughout all parts of the civilized world medical men have made similar reports of equally effective results. Striking testimonials to the success of Credé's plan are given conspicuous place in medical literature. It has been shown by Köstlin that, previous to the adoption of the nitrate of silver treatment, the number of cases of ophthalmia in the practice of thirty-two observers ranged from 2.25 per cent. to 59 per cent., and averaged 9.24 per cent. After the adoption of the Credé treatment among 24,724 babies, ophthalmia varied from zero to 1.93 per cent., an average of 0.655 per cent.

There has been much objection to the use of nitrate of silver on account of the exceptional cases of hyperemia of the conjunctiva following its use, but this has never been severe, if the procedure as recommended by Credé has been carried out according to his directions. The solution should be neutral, or only slightly acid in reaction, and not more than 1 drop of this solution should be instilled into the conjunctival sac, and should not be repeated. This is preferably done by means of a glass rod. If the infection has already taken place, a single instillation of the nitrate of silver would not abate the disease. Experiments have been made with various antiseptics, especially with the newer silver salts, which are undoubtedly less irritating to the conjunctiva, but it has been found that although in some cases the use of solutions of argyrol and protargol have shown a certain amount of efficiency as a preventive of ophthalmia neonatorum, they have not as yet been given sufficient trial to be preferred to nitrate of silver. From the statistics collected by Sydney Stephenson, it goes to prove that weaker solutions than 2 per cent. are efficacious. The 1 per cent. solution is fully protective and is to be regarded as absolutely prophylactic.

Even with this means at our disposal numerous cases occur in which this prophylactic has not been used and the results of the neglect are only brought to our notice when statistics are sought as to the cause of blindness. In America it is exceedingly difficult to ascertain how general is the ophthalmia of new-born children and what results follow it. It is impossible to state definitely the exact percentage of blindness due to this cause. In the United States there are more than 10,000 persons blind from ophthalmia neonatorum who, if ordinary precautions had been taken at the time of birth, would to-day have their sight and be useful members of society. Statistics are sadly deficient, but it is nevertheless a fact that there are many cases of infantile blindness as the result of ignorance and neglect at the time of the birth of the child.

The most recent report of the Committee on Ophthalmia Neonatorum of the American Medical Association, based on statistics taken from the records of ten schools for the blind in eight states of this country and from the Province of Ontario, has shown that 28.69 per cent., or over one-quarter of the whole number admitted to these schools, were blind from a cause that was preventable. The report of the Pennsylvania School for the Blind, covering a period from 1900 to 1907, inclusive, eight years in all, 33.36 per cent. of the pupils admitted had lost their eyesight as a result of ophthalmia neonatorum. From such reports from states where every facility is given to attain the highest standard in sanitation and guard against unnecessary disease, it is logical to reason that at least the same proportion of blindness from this cause exists in other communities where like precautions are not strictly adhered to. This can only be determined when exact statistics can be obtained. Ophthalmia neonatorum is preventable, but owing to the lack of proper laws, it is difficult to determine the frequency of its occurrence, the conditions under which it exists and the best methods by which results may be attained in protecting the eyes of the new-born child.

Ophthalmia neonatorum is forcibly called to our attention not because of its frequent occurrence but because of the disastrous results that it produces, total or partial blindness. Although it is no respecter of persons, it is much more frequent among the very poor and neglected than among those in the higher and more favored walks of life.

That ophthalmia neonatorum is a preventable disease has been conclusively proved, if proper care is exercised at the birth of the child, and it can be cured if effective treatment is begun immediately on the development of the disease. On the other hand, ophthalmia neonatorum is fatal to sight unless prophylactic and curative measures are promptly taken, and finally results in total blindness through the destruction of the eye-balls.

The public must be educated not only to the existence of such a disease and the terrible consequences that may result from its presence, but to the fact that it is preventable. They must also be made to realize that their aid is necessary in securing such legislation as will make compulsory the use of such measures as will prevent this disease, if we wish to protect the children of the coming generations from total blindness. The movement to stamp out this disease resembles very much the fight that is being carried on against tuberculosis. The medical profession requires the backing and support of the laity, who working together will be able to wake up the interest of the general public as to what is required to protect the infants of the future against blindness. Education in the movement may be carried on by means of a wide distribution of literature, leaflets and various forms of propaganda, photographic exhibits, lantern slides, press notices, magazine articles and public speaking before all kinds and grades of audiences.

The statute books of many states contain laws relating to the prevention of ophthalmia neonatorum, but unfortunately these laws have become more or less of a dead letter, and an effort should be made requir-

ing their enforcement. If this were done and a few prosecutions obtained for failure to adhere to the law, much benefit would be reaped in the fight for the prevention of blindness from ophthalmia of the new-born.

Laws should be passed which would require state control of the blind. All cases of inflammation of the eyes of new-born babies should be reported by physicians and midwives. Provision should be made for the care of all such cases in hospitals, and appropriations should be forthcoming in order to provide for the education, registration and regulation of midwives. Births should be reported early and the question asked in each certificate, "What preventive for ophthalmia neonatorum did you use? If none, state the reason therefor."

One of the most important factors in the suppressing of the disease is the registering and licensing of midwives, for many of these women are hopelessly ignorant, dirty and careless, and that they play no small part in the effort to check this disease must be admitted. In the year 1907, 42 per cent. of the births occurring in New York City were attended by midwives; while in Chicago last year they attended over 20,000 of the 50,000 births reported. On the other hand, the figures collected from among physicians have proved to be somewhat discouraging. A recent investigation made in Massachusetts, under the direction of the Boston School for Social Workers, disclosed the surprising fact that out of ninety-seven doctors visited (these doctors having been selected because of their reasonably large obstetrical practice), twenty-seven always used a prophylactic, forty seldom did so, twenty-eight never used a recognized preventive, although the last admitted that they sometimes employed warm water, lemon juice, citric acid, lard, camomile tea, etc.

THE COST FOR ONE YEAR OF NEEDLESS BLINDNESS IN NEW YORK

Cost for education and maintenance of those blind from ophthalmia neonatorum at Batavia School for the Blind in one year	$14,260.05	
Education alone in school for the seeing (public schools) would have cost	1,050.00	
Excess cost paid by the state at Batavia		$13,210.05
Cost for education and maintenance of those blind from ophthalmia neonatorum at New York Institute for the Blind in one year	$18,904.40	
Education alone in school for the seeing would have cost	1,200.00	
Excess cost paid by state in New York City		17,704.40
Total excess in one year for unnecessary blindness		$30,914.45

THE COST OF NEEDLESS BLINDNESS IN OHIO

Victims of ophthalmia neonatorum in State School	64
Per capita cost in State School (average)	$340.00
Maintenance and expense, per capita cost seeing schools (average)	30.00
Maintenance private expense, per capita excess for needlessly blind	310.00
Total annual excess cost for maintenance and education of those whose sight might have been saved	$19,840.00

The cost for maintenance and education for each child in the New York State School for the Blind, at Batavia, is $407.43 per year, while

it costs the state but $30 per year for each child attending the public schools of Buffalo—an excess of $377.43 to be provided by the state for each blind child—and one-third of the children at the New York State School for the Blind are victims of ophthalmia neonatorum.

This total of more than $50,000 expended annually in two states for the support of ophthalmia neonatorum victims does not include appropriations made by the state to private institutions, nor the cost of maintaining and educating the blind children at private expense. Nor does it take into account the incalculable loss to the state, in many instances, of one of its most valuable assets—a productive citizen. Argument seems unnecessary, when we contrast with these figures the estimated loss to the State of New York of $5,000 annually for a free distribution of a prophylactic against ophthalmia neonatorum, while the estimate to meet the need in Massachusetts is $2,500.

In a recent report of the Illinois School for the Blind at Jacksonville, 17 per cent. of the inmates were blind as the result of ophthalmia neonatorum. Sixteen of the thirty-two children in the kindergarten had lost their sight from this disease.

From these figures, is it asking too much of this state that proper legislation be enacted, making it compulsory to use such preventive measures that will protect its citizens from the untold misery of blindness? Helen Keller says regarding the prevention of blindness: "Once I believed that blindness, deafness, tuberculosis and other causes of suffering were necessary, unpreventable. I believed that we must accept blind eyes, deaf ears, diseased lungs as we accept the havoc of tornadoes and deluges, and that we must bear them with as much fortitude as we could gather from religion and philosophy. But gradually my reading extended and I found that those evils are to be laid not at the door of Providence, but at the door of mankind.

"The problem of prevention should be dealt with frankly. Physicians should take pains to disseminate knowledge needful for a clear understanding of the cause of blindness. The time for hinting at unpleasant truths is past. Let us insist that the states put into practice every known and approved method of prevention, and that physicians and teachers open wide the doors of knowledge for the people to enter in. The facts are often revolting, but it is better that our sensibilities should be shocked than that we should be ignorant on subjects on which rest sight, hearing, intelligence, morals and the life of the children of men. Let us do our best to rend the thick curtain with which society is hiding its eyes from unpleasant but needful truths."

7 West Madison Street.

DISCUSSION

Dr. J. Whitefield Smith, Bloomington: Dr. Woodruff was kind enough to let me know something about the nature of his paper and the manner in which he was going to treat this subject. I have made a note of two or three things which I desire to call attention to particularly. The paper is an excellent one, and one that is very practical, as we all must agree, from the fact that it is one that does not belong entirely to the specialist. These cases do not come to the specialist first-handed, but usually go to the general practitioner first,

and for this reason it seems to me this paper is one that interests both the general practitioner and the specialist.

Since the days of Neisser, 1879, ophthalmia neonatorum has been regarded as due to a microorganism, the gonococcus. I believe that has been generally recognized.

Dr. Woodruff has told us about the Credé plan by which great good has been accomplished. It is a well-known fact that infection may take place even earlier, that is, before the Credé method can be used. Indeed, children have been born into the world blind, or children have been born into the world with blennorrhea already existing and advanced. Children have been born in which the cornea has already been destroyed. We have no means of reaching or protecting the individual's eyes in cases of this kind. The question naturally arises from this, "Are there any methods or any plans which can be suggested or brought to the notice of the profession, or be developed by the profession, whereby the new-born child's eyes may be protected?" It is also a well-known fact that most pregnant women have a catarrhal secretion. In most instances this secretion is benign, while in other cases it is virulent or gonorrheal in its nature. If we could obtain some knowledge in advance, a method might be inaugurated whereby the child's future vision may be protected. I believe, as a routine practice, there is nothing of this kind established. Perhaps in large maternity hospitals a uniform practice is adopted in dealing with these cases, but the general practitioners we meet down through the state do not have the opportunity to make investigations, to make bacteriologic examinations and determine this thing in advance, so that we have to be content with the best we can do in the light of what we have, so far as observing antiseptic precautions at and during the time of parturition or labor.

Another thing I desire to speak of, to which your attention has been called, is the fact that the public mind needs to be educated in these matters; that there must be necessarily a conscience awakening on the part of the laity, which is very important and imperative, in order that we may secure more attention in public matters of sanitary science and in the prevention of disease than has heretofore been inaugurated. In this way we may get better enactment of laws, better protection of society and humanity in general. The subject has been ably discussed, and I only need to call your attention to this in a word or two in passing.

Another point I want to speak of and to emphasize is, that the general practitioners usually are the ones who see these children who have diseased eyes, or whose eyes are infected, and in cases of blennorrhea which come on in a few hours after the birth of the child, it is highly important that these cases should be recognized early and methods inaugurated at once which will be of benefit in preserving the vision of these children. The general practitioner comes in contact not only with these cases, with the individual children, but he comes in contact with the laity perhaps more than the eye specialist or any other special field of practice I might mention, and for this reason it seems to me he has an opportunity to call attention to the prevention of blindness and to the infection and trouble that originate from germ disease, and in this way the public mind and the public conscience can be awakened so that we may have a better opportunity of having proper laws enacted.

Dr. A. L. Adams, Jacksonville: Speaking of the School for the Blind at Jacksonville, I thought it might be of interest for you to know that one-third of the inmates of that institution are there as the result of blindness which might have been prevented, and the proportion of cases is very similar to what Dr. Woodruff has said. Ophthalmia neonatorum and acute inflammations of the conjunctiva are the principal causes, trachoma and accidents following closely after.

In regard to the cases of ophthalmia, I notice that Dr. Woodruff said 50 per cent. of the cases of confinement in Chicago were treated by midwives. I do not know the facts, but at the Child's Welfare Exhibit in Chicago the percentage

is put at 86, leaving only 14 per cent. of the cases as being attended to by physicians.

In regard to the accidents, I have seen a great many of the pupils at the School for the Blind who were there as the result of blindness where the eyes received penetrating and other injuries. Some of them had not seen a physician at all. The accident was looked on as a trivial affair because there was no great amount of inflammatory reaction following the injury or accident. The important point to know is that every penetrating injury of the eye is a very serious matter and should receive not only attention at the time, but it should be followed up in order to avoid the development of sympathetic ophthalmia. A solution of the problem to me appears to be one of education. It must be necessary that the people should know the facts, and I believe when they learn the possibility of the prevention of blindness, that by a campaign of education, such as has been carried on with reference to tuberculosis, then we can have early treatment which will result in the prevention of a large number of cases of blindness.

Dr. A. H. Burr, Chicago: Dr. Smith raised the pertinent inquiry when he stated what could be done to protect the unborn child from ophthalmia neonatorum. I think a number of things can be suggested that ought to be pregnant in the way of arousing thought and educational interest along this line. I came into the medical profession at a stage when the treatment of gonorrhea in the office of the average practitioner was looked on by many of our over-pious hypocrites with disdain, and many a young man was turned away from the office of a physician to whom he applied for treatment with the discouraging statement, "You have a loathsome disease; it serves you right. I do not treat clap." If there is any body of men in the medical profession for whom I have profound respect it is the genito-urinary surgeons. I am not one of them. I look on every man who is conscientiously engaged in the treatment of gonorrhea in the male or female as a man who is engaged in prophylaxis, a man who is engaged, if you please, in the prevention of ophthalmia neonatorum.

My idea of the prevention of ophthalmia neonatorum goes back to the instillation of nitrate of silver into the eye of the new-born. If you want to protect the new-born, which Dr. Smith spoke of, where gonorrheal destruction of the eye has even occurred before the birth of the child (and I can conceive very readily how it can be done), then I say protect the mother against gonorrhea. How are you going to do it? I know of no way except to protect her at the license window, where the marriage certificate is obtained. You can protect her there only by appropriate legislation in which both candidates have to come under medical inspection, and they must approach that window for a license with a certificate of freedom from infectious disease. I believe it should be done in every marriage. In that way we will shut off a great deal of ophthalmia neonatorum where the infection has antedated marriage. I believe infection antedates marriage in candidates in probably 75 per cent. of the cases. If 75 per cent. of all males, sooner or later, contract gonorrhea, I think a large proportion of that gonorrhea is carried over at the time of marriage.

Dr. Arthur R. Reynolds, Chicago: This is a most interesting and instructive paper, and when the information contained in that paper and its discussion become public, and the public understand it, I believe a great deal will be done to wipe out preventable blindness. To that end, I would like to have Dr. Woodruff in his closing remarks tell us what is necessary for the obstetrician or the midwife to do for the eyes of the new-born on the day of parturition.

Dr. Garrison: I am interested in this subject from the standpoint of a general practitioner, and a country practitioner at that. The paper dealt largely with the question of ophthalmia neonatorum, and that is one that is comparatively foreign to the country doctor. I make mention of it because there is a difference in the experience between the practitioner in the city and the practitioner in the country, so that it may not be as thoroughly appreciated by all. My experience has been limited to 500 or 600 cases of confinement, and I have not had in my practice a single case of ophthalmia neonatorum, that is, of a severe

type. Occasionally I have had mild infections of the conjunctiva, but not of gonorrheal origin, but due to a lack of cleanliness or something of that sort. I do not take credit for this, because I have not used nitrate of silver. I would not discourage the use of it for a moment where it is demanded. I will simply say that all I have done has been to insist on cleanliness, the use of pure water when the child is born. Possibly, if I thought there was anything suspicious, I would use normal salt solution, particularly if the eyes became irritable or slightly inflamed a few days after birth, or I would use a solution of boracic acid. Aside from that, I can say that I have never had a well-developed case of ophthalmia neonatorum. What the general practitioner may do to prevent it is an important question, especially to those in the city, but it applies to those in the country as well.

I am sorry Dr. Woodruff did not mention some other sources of blindness with which the general practitioner comes in contact first, and is not very well able to cope with it. Dr. Adams made reference to it, and that is the question of corneal ulcers or trachoma which leads to corneal ulceration. The general practitioner comes in contact with such cases very frequently in my experience, much more frequently than he does with ophthalmia neonatorum, and the results are disastrous if he neglects it. Timely treatment will prevent ulceration following and the blindness which will occasionally follow from ulcer. Advice along that line will be generally appreciated.

Dr. William H. Wilder, Chicago: There is one phase of this question I would like to touch on particularly, because it has been brought out in recent studies of the question, and that is as to the importance of treatment of these cases once they have come into the hands of the general practitioner. It has been developed by the studies of the sociologists, who are interested in the question of prevention of blindness, that the enforcement of the statute which is on the statute books of different states is largely due to the efforts of the men who have been interested in this subject in the last generation, requiring all midwives to direct a case of inflammation of the eyes occurring within two weeks after birth to the practitioner of medicine for treatment, and they should be able to recognize the danger of inflammation of the eyes occurring within two weeks after birth.

Now, it develops, and it is a lamentable fact, that many practitioners of medicine to whom such cases are referred, either become rusty in their knowledge of the treatment of such cases or they have never acquired it, because I personally know of many cases that came from practitioners who had not treated them correctly, and the result has been a destructive ulcer of the cornea. We may as well admit it among ourselves, that many physicians are not qualified to treat these infectious diseases of the eyes of the new-born. It is simple enough, after all, and many cases have not been properly treated before destructive ulceration of the cornea occurred. I think it will be the consensus of opinion among all ophthalmologists that the great majority of these cases will not go on to ulceration of the cornea because of the peculiar resisting power of the cornea in children, which is in marked contrast with the resisting power of the cornea in the adult. The expert ophthalmologist in cases of gonorrheal ophthalmia in adults can count on the majority of them losing the cornea, in spite of anything he does, and it seems hardly necessary to direct attention to the fact that the tissue of the older eye does not have the resisting power that it does in the young. The practical point is this: we have these statutes on our books in this state, but they are not enforced, so that they are practically a dead letter. There is a statute on our books in Illinois directing all midwives who notice the development of a catarrhal inflammation of the eyes within two weeks after birth, to direct the case to a competent physician for treatment. If such a case is sent to a physician for treatment and is not properly treated, the evil is done and is as great as it was before. We must cooperate with the movement now under way and amplify the laws on our statute books, have them amended so that this disease is classed as one of the dangerous contagious diseases. No one particularly wants to treat a case of ophthalmia neonatorum. It is a disagreeable task at best, and it seems to me that one practical point we should be unanimous on is to make

this disease in a sense one of the dangerous contagious diseases, and have a law enacted requiring that such cases be referred to the health authorities—the local health authorities—who in turn will direct an expert to cope with them just as we have experts in small-pox and other diseases. In the local health departments there will be found someone who can properly cope with this disease.

And now a word or two in regard to the treatment by the general practitioner in another prevalent form of blindness, frequently met with in manufacturing and mining districts, and that is the blindness which results in infectious ulceration of the cornea, which in many cases goes on to complete destruction of the eye, purely and simply, because the man who first saw it did not recognize its true nature, considering it a mild affair, but we know that a little fire after it is started may turn out to be a great conflagration. If our general practitioners were a little more conversant with the treatment of these trivial ailments, many an eye could be saved from complete destruction. Those who work in the large eye hospitals in Chicago recognize the importance of this. If you can remove a foreign body and disinfect a slight wound produced by that foreign body, a bit of coal, or a cinder, or a particle of steel, you can save the eye, but if a serpiginous ulcer results, it may lead to a destructive panophthalmitis.

Dr. Woodruff (closing the discussion): In regard to the question of what should be done when we suspect the presence of the gonococcus and danger of the baby's eye becoming infected. One drop of a 1 per cent. solution of nitrate of silver should be instilled into the baby's eye at birth. It is not going to do harm. It is much better that a little irritation of the conjunctiva should follow than that the child should be neglected and a purulent inflammation be set up and the child become blind the rest of his life. One drop of a 1 per cent. solution of nitrate of silver dropped between the lids may set up an irritation, but it will respond very quickly to treatment, such as cold applications, irrigation with boric acid solution and cleanliness.

In regard to protecting an eye that is not infected, the best means I think we have at our disposal is what is called the Buller shield. This is a watch glass placed in front of the sound eye, held there by a piece of plaster, with a small opening, so that the tears can run out and air can get into the eye. This will protect the sound eye as effectually as anything with which I am familiar.

Dr. Adams spoke of 86 per cent. of the cases being attended by midwives in Chicago. These statistics are for the year 1904, according to the number of reported births, but I do not think they were all reported. In the last report, last year, there were reported about 50,000 births in Chicago, and between 20,000 and 25,000 of these births were attended by midwives. Those are the figures given out by the health department.

During the last week there was started in Chicago a movement for the establishment of a society for the prevention of blindness and the conservation of vision. You will hear more about this during the next twelve months or in the fall, when an active campaign will be started to get all sections of the state interested in this society, and an endeavor will be made to get such legislation as will prevent blindness in this state. New York is the headquarters for the National Association for the Prevention of Blindness and the Conservation of Vision; and the Russell Sage Foundation for the Prevention of Blindness. This society will probably cooperate with these societies in New York. All births should be reported within a reasonable time. Where any irritation of the conjunctiva is present it should be compulsory to report such cases within twelve hours after birth. Physicians should be compelled to make such a report as well as midwives. In Boston there is a law which requires midwives to report any case of inflammation of the eye. This law was more or less a dead letter, until several cases of blindness appeared as the result of ophthalmia neonatorum. The guilty parties who failed to report were prosecuted and wide publication given to the fact in the daily press. During the next month there were reported twice as many cases of ophthalmia neonatorum as had been reported before. For instance, instead of ten cases being reported in a month, there were 120 cases reported before many months had gone by.

THE HEALTH-CONSCIENCE AND THE DRINK PROBLEM*

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For the very apt expression, "health-conscience," we are indebted to that well-known Scottish physician, Dr. T. S. Cloudsley. In this presence a definition of Dr. Cloudsley's significant utterance would, I am sure, be superfluous.

I am old enough to have been engaged in the practice of medicine in Illinois when to all intents and purposes there was in my native state no such thing as a health-conscience. To substantiate the foregoing allow me very briefly to recount some experience I passed through in an epidemic of diphtheria that occurred at Tolono, Ill., in 1874, where I was then located. And here let it be said that at that date, outside of Chicago, boards of health, both local and general, were wholly unknown in the state, and furthermore, the discovery of diphtheria antitoxin was fifteen years in the future.

The Tolono epidemic occurred in the late summer and early fall months and not long after its inception I was called to see a little girl who was in the first stage of the disease and was one of five children, ranging in age from 5 to 15 years. More attractive children I had never seen. They all had fair skin, bright blue eyes, sunny hair and the most agreeable countenances. Naturally I was greatly interested and resolved to make an effort to prevent the rest of the children from contracting the disease. There were two up-stairs rooms in the house and in one of these I proposed to put the patient and meantime keep the remaining children downstairs and out of doors as much as possible. But to my well-meant plans the father, an Irishman, made strenuous objection and I shall never forget his countenance as he said, "No, docther, we'll jist let 'um all doi together." Sad to say it was not long till three of these beautiful children were dead and lying side by side in the cemetery. I now know that could I have only carried out my plans the disease in that family would not have extended beyond the initial case.

My sad experience in this Irish home was not only duplicated more than once during that epidemic, in my own practice, but likewise in that of my colleague's as well; for all suggestion of quarantine fell on deaf ears as also did our protests at the holding of public funerals. Indeed, all we got for our pains in the last instance was the accusation of being hard hearted and lacking in sympathy for the dead.

What was true of diphtheria in Tolono in 1874 was true of diphtheria elsewhere, and likewise of scarlet fever, of typhoid and indeed, of all contagious diseases throughout the length and breadth of the great commonwealth of Illinois. Why? First and foremost because there was an utter lack of health-conscience. And, because there was no health-conscience, there were no health laws, no health officers, no health boards. But fortunately for suffering humanity the morning of a much better and

* Read at the Sixty-First Annual Meeting of the Illinois State Medical Society, at Aurora, May 16-18, 1911.

brighter day was near at hand and came in 1877, when the first medical practice act was spread on the Illinois statute books, the first state board of health organized and its first secretary, Dr. John H. Rauch, began his work at disease prevention which with the lapse of time became more and more effective. Coincidently, the public health-conscience was quickened, aroused and became a tangible reality. So tangible in fact that were I called on to frame an epitaph for Dr. Rauch I would write, "builder of the first Illinois public health-conscience."

But among the infectious diseases on which Dr. Rauch made war in the pioneer days of the Illinois State Board of Health, tuberculosis had no place whatever. Do I hear some younger member of the profession ask why this neglect? If so I would answer that when Dr. Rauch did his earlier work the profession was as much in the dark regarding the true etiology of tuberculosis as it was in the time of Hippocrates, nearly 2,500 years ago. But fortunately again for suffering humanity, the dawn of another bright day was not far off and came in 1882 when Dr. Koch discovered the tubercle bacillus and demonstrated the true nature of tuberculosis.

In the light of this discovery, the profession in due time came to realize the enormous prevalence of tuberculosis and the imminent danger of the constant increase of this prevalence. Meanwhile the more progressive members of the profession began to devise means for the cure and curtailment of the disease, and coincidently some of the laity became interested and gave their cooperation. And so the good work has gone on, and what are the conditions to-day?

In answer I would say that not only has the spread of tuberculosis been materially lessened, but the public health-conscience has been so aroused that among the agencies at work may be named the church, which regularly sets aside certain Sundays for detailing the dangers of the disease and the suggestion of means for its prevention and cure. Meanwhile the papers, magazines and public prints of all kinds fairly teem with articles describing the inroads of the malady, pointing out its danger signals and suggesting ways and methods for avoiding the disease. Thus has it come about that in all that pertains to tuberculosis, it may be said that "he who runs may read."

We have in this country another serious disease, concerning which there is urgent need that the public health-conscience should be aroused. That disease is alcoholism. Does someone express surprise at this allegation? If so I will say that when one contemplates the great amount of sickness, the perverted nature, disordered mentality, pitiful poverty, horrid criminality and appalling aggregate of human suffering all chargeable to alcoholism, that disease assumes an even graver aspect than that other terrible malady, tuberculosis. Indeed, of tuberculosis, alcoholism is a fruitful cause.

In his article in the *Twentieth Century Practice* Dr. Adolphus Knopf says: "That alcoholism is one of the greatest direct and indirect causes that prepare the field for tubercle bacilli is now generally conceded, not only by all physicians and sanitarians, but by all sociologists who have

studied the subject. It is not only a phthisiogenetic disease in life, but according to statistics carefully kept in European hospitals for children, in more than 50 per cent. of cases either father or mother, or both, were alcoholics."

Said the eminent late Dr. Brouardel of France: "Alcohol is in effect one of the most powerful factors in the production of tuberculosis."

Bernheim said: "The abuse of alcohol favors the breaking out of tuberculosis . . . and in France tuberculosis increases in a parallel ratio with alcoholism."

Speaking of the relation of alcoholism to tuberculosis, Dr. William H. Welch of Johns Hopkins said: "The lowered resistance (of the inebriate) is manifested by increased liability to contract the disease and the greater severity of the disease." It is estimated that about 140,000 deaths occur every year in the United States from tuberculosis. If we allow one in five of these to have had its inception in drink, directly or indirectly, we get 28,000 cases of tuberculosis as the result of alcoholism.

In this connection it is proper to say that Metchnikoff demonstrated that alcohol paralyzes the leukocytes and renders them relatively incapable of withstanding disease invasion.

Rubin made leukocyte counts in sixty inebriates and found the average number of white corpuscles to be 53,000 per cubic millimeter. At the same hour and under like conditions a count was made on sixty normal individuals and this yielded 75,000 leukocytes per cubic millimeter. Accordingly it would seem that when compared with a normal individual the inebriate suffers a loss of 33 per cent. in his disease resistance.

Dr. Charles E. Stewart in a series of experiments found that the much advertised peruna, in a dose of 2 ounces, four hours after administration, reduced the opsonic index from 0.98 to 0.21.

Insanity is another terrible disease that in no small number of cases finds its etiology in alcoholism. And one of the world's leading alienists, Professor von Kraepelin, says that one-third of all the insane cases seen in Munich are the result of drink.

Dr. Clouston, superintendent of the Royal Asylum, Edinburgh, says that 42 per cent. of the patients under his care owe their condition to alcoholism.

Said Dr. Theodore B. Hyslop, an eminent English authority: "My own experience leads me to believe that alcohol is a direct, or indirect factor in the causation of at least 50 per cent. of the cases of insanity."

Magnan, a French alienist, says that of all insane patients received in the great public Asylum of Saint Aine during the year 1900 more than 31 per cent. were simple alcoholics and 19 per cent. were insane alcoholics, making a total of more than 51 per cent. of primary cases of insanity from drink.

But the truth is a drunk man is really insane. Said Dr. Alexander of Philadelphia: "No one who drinks to excess should be considered sane and responsible. Intoxication literally is insanity and irresponsibility and will be so considered in the future."

Bebee says the inebriate is insane and should be prevented from contracting marriage and propagating degenerates.

It is estimated that there are about 160,000 insane in this country to-day and on the very conservative estimate that but one in four reached his unfortunate condition through drink, direct or indirect, we have a total of 40,000 cases of insanity from alcoholism.

Those who have given the matter study are convinced that in the production of criminals drunkenness has more to do than any other one thing. Said a police magistrate in one of our large cities: "Find an antidote for intoxication and most of the work of the police courts would be abolished."

The Lord Chief Justice of England declared that after forty years at the bar and ten years on the bench he had no hesitancy in saying that 90 per cent. of crime in England had drink for an important factor.

Another judge of large experience declared that there is not one case in twenty where a man is tried for murder that alcohol is not the direct or indirect cause of the crime.

Drew reports that of 154 criminals admitted to the Massachusetts Insane Asylum ninety-six, or 62 per cent., were hard drinkers.

There are said to be 250,000 criminals in this country. Let us be conservative and allow that only half of these came to their unfortunate condition through the use of intoxicants and this will give us 125,000 outlaws as the result of drunkenness.

Epilepsy is another disease that finds in drink a most important factor in its etiology. Conservative estimates refer every fifth case of epilepsy to alcoholism, either in the victim or in his ancestry. There are said to be in the United States no less than 175,000 sufferers from this disease, and on the basis above given we get 35,000 epileptics who owe their condition to drink.

Those who have made a study of the subject believe that fully one-half the syphilitic infections in this enlightened land of ours are due to intoxicants. And how many prostitutes owe their unfortunate condition to drink the world will never know, as a glass of wine and a heartless companion have, without question, been the ruin of thousands of innocent girls who ever after led lives of shame.

Some more of the products of drink are poverty, pauperism and vagrancy. Said Judge Sanford M. Green of the Michigan Supreme Court: "Intemperance is the parent of pauperism."

Dr. A. G. Lawrence is authority for the statement that of 2,598 inmates at one time in the New York City Almshouse no less than 90 per cent. were there on account of drunkenness.

Dr. Charles S. Hoyt, some years ago secretary of the New York State Board of Charities, says that at one period there were in round numbers 12,000 inmates in the New York Poor House, and of these, 84 per cent. of the males and 42 per cent. of the females were alcoholics.

From those who have given the subject attention we learn that there are in this country 4,000,000 paupers and vagrants. That we may be absolutely safe let us cut these figures in two and say that there are but 2,000,000. Let us again be moderate and allow that only half these lost out in the battle of life through drink, and on this conservative basis we

get in this, the most prosperous country in the world, 1,000,000 human beings who are paupers on account of drunkenness.

But beside producing poverty, pauperism and vagrancy, drunkenness destroys the home. Indeed, to this cause is attributed the destruction of 150,000 homes in the United States each year.

By reason of drunkenness it is believed that to-day there are in this country no less than 1,000,000 shipwrecked lives, human derelicts so to speak, floating here and yonder on the sea of life. Further details are not necessary. You all know them. Indeed, you all have them in your villages, in your towns, in your cities; for wherever are your homes these drunken wrecks, like the poor, you have always with you.

It is well known that alcoholics are poor subjects to recover from wounds, injuries and operations. Said Sir Frederic Treves, the great English surgeon: "Having spent the greater part of my life in operating, I can assure you that the person of all others that I dread to see enter the operating theater is the drinker."

The abstainer invariably has more endurance than the drinker, and no class of men are more alive to this fact than athletes and those training for the prize-ring. Under this head I may be excused for again quoting from Sir Frederic Treves, who was the medical officer in charge of the 30,000 English troops who in very hot weather made a forced march to Ladysmith that was besieged by the enemy during the Boer War. Referring to the soldiers who made this forced march, Sir Frederic said in substance: "Those who gave out and fell by the wayside were not the short men nor the tall men, not the fat men nor the lean men, but the *drinking* men, and the *drinking* men just as surely as if they had been labeled on their backs."

Let us now turn our attention for a moment to the mortality from alcoholism. The late Dr. Benjamin Ward Richardson, an eminent English physician and philanthropist, estimated the deaths in England from drink to be not less than 10 per cent. of those from all causes.

Dr. Willard Parker, a leading New York surgeon a generation ago, estimated that 33 per cent. of the Empire City's total death roll was directly or indirectly due to drunkenness. In this country and in most others it is next to impossible under existing circumstances to get the real facts pertaining to alcoholic mortality. The reason is obvious. Desirous of sparing the friends of the one who came to his death, directly or indirectly, by the use of too much drink, the physician in designating the cause of a fatal termination, more often than otherwise fails to "tell the truth, the whole truth and nothing but the truth." For illustration, one of his patrons dies of what is plainly alcoholic cirrhosis of the liver, and a death certificate is made out that a thousand to one has left out that most important word *alcoholic*. Indeed, the physician may even go further and assign a simple inflammation of the liver as the cause of death. Again, another patron who his physician knows is an alcoholic takes pneumonia and dies because of his habits, and when the death certificate is made out the contributing cause is left out, or some other than the true one, namely, *alcoholism*, substituted.

Fortunately for our purpose there is one country that requires and gets the *true* cause of death from the physician. That country is Switzerland. And Switzerland's mortality lists show drunkenness to cause more than 10 per cent. of the total deaths.

In the United States there are about 1,500,000 deaths each year from all causes, and if we allow 10 per cent. of these to be of alcoholic origin, we get annually 150,000 dead from drunkenness. Let us now get some of our figures together: We have seen that each year drink is the exciting cause of 28,000 fatal cases of tuberculosis and the destroyer of 150,000 homes; the cause of 40,000 cases of insanity and of 35,000 epileptics; the chief factor in the production of 125,000 criminals; the direct cause of 1,000,000 shipwrecked lives; the direct or indirect producer of 1,000,000 paupers; the chief contributing cause of thousands of cases of syphilis; the seducer of an untold number of young women, and the most important factor in producing and promoting prostitution. And finally drink each year adds to our mortality lists 150,000 lives. And most of these 150,000 dead from alcohol are males and very many of them men in or near mature manhood.

One hundred and fifty thousand dead each year from drunkenness! Do we realize what that means? Fifty years ago this country was in the throes of the greatest civil war of modern times, and during its four years' continuance the world stood aghast at the awful sacrifice of human life that was incurred. And yet the average yearly death-loss in both the Union and Confederate Armies from disease and in battle was less than in our day occurs in this country each year from drink.

A little less than 100 years ago on the field of Waterloo was fought one of the greatest battles in the world's history. One of the results of this battle was the overthrow of Napoleon, his banishment to St. Helena and the settlement of the future of Europe for a century or two. But notwithstanding the mighty issues at stake at Waterloo the total number of soldiers who contended on that renowned battlefield did not exceed the number of human lives exacted each year in this country by alcoholism.

Is it not time, fellow practitioners, that we were giving heed to this important subject, the drink problem? Not as fanatics. Not as visionary theorists. But as practical men learned in the theory, and skilled in the art of one of the noblest of callings, shall we not by word, deed and example show our interest in this momentous question?

We pride ourselves on being members of a profession whose chief purpose is the relief of suffering and the cure and prevention of disease. And in these latter days we are all in a sense sanitarians and as such are prone to push the good work of disease-prevention. But in this most commendable effort are we at all times and in all things consistent? If so why do we quarantine scarlet fever and seek to check the spread of typhoid, diseases that claim their victims in this country only in thousands, while alcoholism, that meantime slays its hundreds of thousands, is left comparatively free and untrammeled to work its ruin and havoc.

Why do we make unceasing war on tuberculosis that harms only the body, while drink is left free to not only prey on man's body, but likewise on his home, his family, his property, his mind, his character, his all?

Surely the wise man of 3,000 years ago was not far wrong when he said: "Wine is a mocker, strong drink is raging, and whoever is deceived thereby is not wise." "At the last it biteth like a serpent and stingeth like an adder."

DISCUSSION

Dr. Frank P. Norbury: Medical men as a rule are not sociologists, nor are they economists, nor do they go very far beyond the circumscribed provincial opinions of their respective bailiwicks, when the discussion of alcoholism is an issue. Somehow, even the skilled clinicians, especially those who see the end-results of alcoholism almost daily in their practice, have a tolerance for its existence, which to say the least, is not in keeping with their mental attitudes toward other conditions which affect public health.

The average physician who makes an appeal to health conscience, such as made by Dr. Johnson, is regarded as an alarmist, a fanatic, or a bigoted Philistine, seeking notoriety rather than good. He is a joke in the average medical audience, tolerated, but with reservations which if publicly expressed would not sound well, and if to appear in print would need a censor to make them acceptable "copy."

I know this to be a fact, even with such a man as Kraepelin, the father of the modern psycho-pathologic study of alcoholism, whose students out of deference to his great personality, respect his opinions, but who nevertheless when he is not present, express pity for his (to them) absurd beliefs. Strange it is what a hold tradition has upon us, and how the cock-tail, the high-ball and that which made Milwaukee famous, usurp prerogatives which though primitive in their ape-like practices, are nevertheless harbingers of evil to health conscience.

Social pathology teaches us, whether we want to take cognizance of the fact or not, that alcoholism is a pathologic symptom of our social life. It is part of the socio-pathogenic phenomena which implies biologic deterioration of the race. Dr. Johnson has shown alcoholism as the leading contributory factor in the etiology of tuberculosis, of insanity and of crime; and yet aside from the social and religious movements which have appealed to the moral issues of the question, little has been done to appeal to the health conscience from a purely socio-pathogenic point of view. The human organism as viewed by the biologist, lives on the basis or expense of its reserves. Every individual has a reserve at birth—at least a potential reserve, and how this reserve is conserved, depends on the right living of the individual.

This is a biologic fact to which all organic life subscribes. Organic life is impossible without energy, and energy comes from food. It is not necessary to discuss metabolism, physiologic work, except to say reduction of vital power real or potential follows when nutrition is inhibited or cut off by alcohol. Death or at least retrogression follows in the train of impaired physiologic activity, resulting from the use of alcohol.

In the study of the survival of the fittest, doubtless we surmise, a philosophic surmise that Nature may be working out a great plan of conservation, of natural selection, of survival of the fittest in this great slaughter of the weak, the underfed; this great ruin; this great economic cataclysm which follows in the wake of alcoholism, and that the health conscience may exist in medical men but is sleeping, guided by that great Divinity which shapes the end of man singly and collectively in social masses of people, victims direct and indirect of alcoholism. Perhaps commercialized liquor traffic is a Malthusian blessing—a part of biologic phenomena that seeks conservation and ultimate perfection of species at the tremendous cost price of human life, which considers not prodigality of life; misery and woe of poverty; the sufferings of the individual or his family in the clouds of mental disease, nor shame in the sting of criminality, but ruthlessly

throws out these waste heaps, these sacrificial offerings, who are of the least use to the species for whom the state must care. This law of selection, this beneficent law (?) of which the man who keeps silent is the sponsor, should by the *silent* medical men be applied to the infectious diseases and let us return to the dark ages where tradition held rife, and death and destruction gave Dante inspiration to tell us of the Inferno.

Let me say, however, in closing, that it is the unfit who are being multiplied—a result contrary to the basal principle of selection and equally contrary to the fundamental interests of the species, in this case the human species. As evidence, read the reports of the Registrar General of England; Director and Secretary of the Poor Law Administration of Paris; the reports of the New York State Commission in Lunacy. If time would permit, I could present other evidences, social and economic, showing how this State is every year by an increment of 400 cases, adding to public care of the insane, 38 per cent. of whom are insane through alcoholism. Not a word is being said—the health conscience is asleep as regards alcoholism. Our State Board of Health has not followed the Health Department of Paris in issuing literature warning us of the evils of alcoholism. We have literature on infectious diseases, including pellagra and hook-worm; new things in public health policies, but not a word regarding that which causes nearly one-half the mental disease, two-thirds of all crimes and a powerful factor in the etiology of disease in general. We are a self-satisfied people, somewhat ostrich-like in our simplicity, but if we ever expect to be able to meet problems face to face, we must recognize, as Paris has done, that alcohol as a pathogenic factor in mental disease is as incontestible as a ruling of the Supreme Court. That alcoholism is the greatest enemy of the progress of the races, and the most potent factor in crime, mental disease and poverty.

Should not our health conscience at least wake up and take notice? I think it should.

L. H. Mettler, Chicago: It has been a treat to have heard this paper and in sincere commendation of it I need only say that I wish it could be reprinted and spread broadcast, among the laity. Upon a subject of this sort it is just such papers that do the most good. A mass of facts, not wholly unknown to the profession but little known to the laity, have here been gathered and presented in a most interesting manner. The doctor uses the term "health conscience" in connection with the awakening of the popular mind to the enormous damage done by the social use of alcoholic beverages. Heretofore the whole question has been relegated to the conscience of both the individual and the community and it has been treated as one almost wholly in the realm of morals and ethics. Hence the temperance crusade was largely left to the clergy, the teachers of morality and the ethical reformers. The idea grew that somehow or other the drinking of alcoholics was a sin, as the Bible condemns the taking of strong drink and as the Bible is to the average person preeminently a moral guide, this also strengthened the idea that the drink problem was largely a moral one. All of this is shown further in the fact that drinkers uniformly manifest a certain degree of shame when they indulge in, or speak of the habit. How noticeable is the apologetic little laugh when, among a group of men, some one suggests that they "have a drink." They reveal thus their smitten conscience. They seem to feel that somehow the moral sense of the community is not in perfect accord with their own mode of conviviality, because the moral sense of the community has grown up about the idea that the drinking of alcohol is more or less of a sin.

There are many, however, who have boldly challenged the sinfulness of the act. They ask, why is the taking of alcohol in itself any more heinous than the taking of a glass of milk? The reply is, of course, that it is not. It is the results of taking alcohol, that lend to the drinking habit its sinful character. This at once shifts the point of view in regard to the problem. The moral or ethical view of the question sinks almost out of sight in comparison with the profit and loss view. It is not a question whether it is right or wrong, *per se*, to drink, but whether it *pays*. Until somewhat recently science was not prepared to present any overwhelming data to the effect that drinking is an immensely

unprofitable thing both for the individual and for the community. In the last few decades a vast amount of statistics have been accumulated to show how the individual organism and the body politic are both tremendous losers by the free use of alcoholics. To take one instance: In the State of Illinois we are told that there are about 8,000 epileptics. Half of these are children. Of these 4,000 epileptic children, half or about 2,000 owe their condition directly to the use of alcohol by their ancestors and to nothing else. What a picture it would be, those 2,000 poor, helpless, worthless human derelicts standing together on some platform and, their ignorant or self-indulgent ancestors being in the audience, they pointing to the latter in scorn and saying "Behold! What we are you have made us! Two thousand of us robbed of our birthrigths and thrown as a useless burden on an already struggling community. And all for what? In order that a few moments tickling of a little nerve, the taste nerve in the back of the mouth, may be experienced." Surely, if such a custom as the drinking of alcohol is a sin, the sin consists in the monumental stupidity and folly of doing that which leads to so unprofitable and disastrous a result. And yet, as the essayist has well and abundantly shown, the frightful ravages upon society of this miserable drink habit are only in small measure illustrated by the picture that I have just portrayed.

It will be said that the dangers of alcohol are not known by the laity and that it is through ignorance and not indifference that intemperance is allowed to work so much harm. To a great extent this is undoubtedly true. It is by the accumulation of statistics therefore, by the teaching of the dangers of alcohol here, there and everywhere and the showing how unprofitable it all is, that a sentiment will be awakened in the mind of the people, the "health conscience." whereby legislation and other means will be adopted to check the use of alcohol as a beverage. The growing temperance movement and the recent wave of prohibition that swept over the country are evidences of the people learning of the dangers of the drink habit. Not as a moral reform but as a matter of profit and loss is temperance now being taught. In the line of this teaching such papers as we have just listened to are invaluable.

INTESTINAL TOXEMIA*

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There is no question but that the subject of intestinal toxemia is one of rapidly growing importance. Its entity as an etiologic factor in diseases of various forms is being recognized more and more every day.

It is my intention to-day to consider the subject from a clinical standpoint only.

First. Intestinal toxemia, as an etiologic entity.

Second. The general symptomatology of cases resulting from intestinal toxemia.

Third. Treatment.

As yet we are unable to differentiate between the metabolic degenerative and the bacterial forms, but I am not so certain that there is a difference, but that the causative factors are the same in both types.

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When we are able to positively differentiate them or know definitely that they are the same, then many conditions that are now obscure will be an open page.

1. Intestinal Toxemia as an Etiologic Factor.—For some time I have been doing work for men in lines other than my own, and I am astonished at the results obtained in these cases and with no other treatment than that directed toward the intestinal tract. The two conditions in which the most good was accomplished were those cases suffering from headache and those in which the neurasthenic symptoms predominated. I have found that about 95 per cent. of all cases of temporal headaches are of intestinal origin, and all are amenable to treatment if the headaches are forgotten and the alimentary tract handled properly.

Many of the so-called hysterical and neurasthenic patients who have been laughed at and doped with sedatives make a prompt recovery when treated rationally through the bowel. I desire to call attention to a number of other conditions that can be traced directly to toxic disturbances in the intestines, namely:

Neuralgias of the fifth nerve which have resisted all other forms of treatment. Recently I have treated two cases of facial neuralgia, one of which was prepared to undergo an operation on the ganglion in order to obtain relief. In two weeks he was well and no return in months from a persistent condition which had lasted for about three years uninterruptedly. The second case was not so severe, but yielded readily to treatment.

I have had three cases of intercostal neuralgia and two of sciatica, all of long duration, in which a decided result was obtained.

Acne and eczema are both traceable to this fountain head of diseases. I have treated several cases of stubborn chronic eczema with good results in a few weeks and no return in months after. The ordinary treatment for this condition had failed.

If in a case of urticaria we look to the intestinal tract, why not in eczema and acne?

Within the last few months I have, in several cases of atonic dilatation of the stomach, used no local treatment whatever for the stomach, and much to my surprise found that under treatment of the bowel all the gastric symptoms have disappeared.

I have seen some cases of asthma improve following the removal of the intestinal toxemia. There is no doubt but that very soon we shall find a direct connection between diseases of the eye and the intestinal canal. Arteriosclerosis will undoubtedly be traced sooner or later directly to this source.

2. General Symptomatology.—The most common type giving excellent results which has come under my observation is the neurasthenic. The mental picture of this type is decidedly characteristic. They frequently seek advice on account of some intestinal disturbance. There is extreme nervousness with marked depression and many forms of mental imaginings, varying from a slight disturbance almost to the border-line of insanity. Indeed some might properly be termed insane.

For instance, one case which I had under my care was that of a man who was positive that he would die of tuberculosis. He had consulted eleven other physicians, the first of whom had told him that he had tuberculosis. Up to that time he had only been depressed following an attack of grippe. When I saw him he had been unable to attend to his business for five months and the idea was so deeply rooted it seemed almost impossible to eradicate it, yet in two weeks this man was able to go to the office for an hour or two daily and in four weeks was active the entire day, and at present is controlling one of the large wholesale establishments in Chicago, and all that was done was to relieve the intestinal toxemia.

The intestinal trouble is generally constipation, occasionally diarrhea or diarrhea alternating with constipation. The depression is just as marked when diarrhea is present as when constipation is present.

Headaches, especially temporal, are very frequent accompaniments. Insomnia is often very annoying. There is restlessness and inability to concentrate the mind. Belching, bloating and pyrosis are present in most cases. Flatulence is excessive in most cases and is often increased after treatment had begun. The patient complains of nausea and occasionally of vomiting.

Difficulty in deglutition is another type. I recently dismissed a patient who for months was treated by a throat specialist without results. After satisfying myself that no mechanical obstruction existed, and taking into consideration her extreme neurotic condition, I directed my attention to the bowel with the result above stated.

The appetite varies. In some cases it remains unimpaired, in others it is poor, while still others are capricious, ravenous at times, preceding headaches occasionally and disappearing entirely at others.

Drowsiness is present in almost every case, as is also dizziness. Ringing in the ears with vertigo simulating Ménière's disease is not at all uncommon.

Cardiovascular sluggishness manifests itself in cold hands and cold feet. I have a patient at the present time whose hands perspire profusely under the least excitement.

A weakened muscular tone is generally found. It ranges from a slight weakness to an actual pain, especially of the leg muscles on walking.

The rheumatic or gouty pains in the muscles and joints give these patients much inconvenience, one of the common seats of trouble being directly over the sciatic notch. Lumbago is not at all uncommon.

In women menstrual disturbances appear in many cases. Loss of weight varying from a few pounds up to 15 to 20 or even 30 or 35 pounds is not uncommon. I have two patients at the present time, one of whom lost 30 and the other about 33 pounds in the last few months.

Pyorrhea is undoubtedly the result of faulty metabolism and toxemia. Dr. Skinner, a dentist of Chicago, informs me that Dr. Black, also a dentist, claims that by improper feeding or overeating he is able to produce lime salt formation on the teeth in from six to twelve hours, or that he can keep it off indefinitely by proper mastication and diet.

We all recognize the fact that an individual suffering from auto-intoxication has a markedly lowered vitality, the bodily resistance not being sufficient to withstand the attack made by organisms against it. For years we have been treating this condition unconsciously, for practically no matter what the condition, the first thing a physician does after being consulted by a patient is to cleanse the alimentary tract and thus aid in relieving the body of the offending material.

Chemical analysis of the stomach contents shows anything from an anacidity to a hyperchlorhydria.

The analysis of the urine is of the utmost importance and it is in this way that the best observations can be obtained on the patient.

3. Treatment.—The treatment of these various conditions is simple. I make no attempt to treat the condition symptomatically, but begin by treating the alimentary tract, paying particular attention to the diet and the mechanical treatment. Medicines are of little permanent value, but procure rapid temporary relief during the time the patient is undergoing the mechanical and dietetic treatment. As soon as the urinalysis is completed and the total amount of the urea, phosphates, chlorids, sulphates and ammonia has been determined, I begin by cleansing the bowel with a mixture perhaps of sodium phosphate and sodium sulphate and sodium bicarbonate, sometimes adding a little sodium salicylate and again menthol. I vary this combination occasionally by adding a small amount of magnesium sulphate. The phosphate, sulphate and bicarbonate of sodium are given in about 10-grain doses each three times daily in hot or cold water after each meal. This acts in most cases as a very mild laxative and is used in diarrheal condition as well as in constipation, and with most astounding results. The salicylates are useful in cases when there is a tendency to rheumatism or gout or when much belching or bloating is present.

For the nervousness I use in most cases a combination of a saturated solution of sodium bromid and chloral hydrate or one-quarter-grain doses of ex. cannabis indica. Fowler's solution is a very useful agent where there is any thyroid disturbance. As tonics I use tr. nux, tr. gentian co. and tr. cinchona co. before meals if indicated.

Diet.—The diet is really the most important part of the treatment. As we all know the greatest amount of putrefaction comes from a proteid diet and if there is an excess of indican and ammonia, showing a large proteid intake, I immediately transfer my patient to a carbohydrate and fruit diet by eliminating from the diet list all meats, fish, eggs, milk, cheese and the like for a short time. The proteid intake is watched by an urinalysis every few days.

Where formerly I thought it impossible to put a hyperchlorhydria patient on a fruit and vegetable diet I do so now with impunity and have no unpleasant results whatever. At first the patient finds some difficulty with this diet, but soon becomes accustomed to it and nearly always ends by commending it.

Mechanically I depend principally on colonic flushing. Not the ordinary large enema, but an injection, which I give myself, depending

more on the temperature of the water than anything else, the temperature ranging from 112 to 130 F. A small quantity of water medicated as desired is put into the bowel through an ordinary soft rubber rectal tube. As soon as the patient complains of a feeling of fulness the water is siphoned out through the same tube and the bowel again filled, then siphoned again. This is continued until from 1 to 3 gallons of water is allowed to pass through the bowel. In case of any ulceration a mild solution of argyrol may be given as an ordinary enema. These flushings may be given daily or on alternate days, as the case demands.

Muscular exercises and manual or vibratory massage are excellent adjuncts in treatment. The ordinary case takes from four to eight or ten weeks to establish a cure.

This field covers such a wide range, that as you notice I have made no attempt whatever to discuss the origin of the toxic condition, but will say in closing that I am of the opinion that the colon bacillus is the important factor.

The subject is so large, so complex, that I have, so to speak, just touched the outer edge. The results obtained in cases which a few years ago would have been considered incurable are so satisfactory as to almost verge on the marvelous.

DISCUSSION

Dr. E. J. Brown, Decatur: This is a very interesting subject. About 60 per cent. of the cases which come to the general practitioner are gastro-intestinal. They show some toxic condition.

One point in regard to these cases which the author did not mention is the effect of displacements of the abdominal organs—the various ptoses—on intestinal intoxications. It is a well-known fact, and it is being recognized by gastrologists, that too much attention has been paid to the chemical analyses of the stomach contents, and not enough to the physical examination. It is well known also that a great many cases of hyperchlorhydria and achylia gastrica and gastric ulcer exist with displacement of the organs. This condition is known by various names. It is also well known that if any one reads a paper now on movable kidney without considering the displacement of other organs, such a paper would be incomplete. If you have a movable kidney, you can make a positive diagnosis of gastroptosis, more or less, or enteroptosis, or general splanchnoptosis. If you study the physical diagnosis of diseases of the stomach by means of outlining this organ by percussion and auscultatory percussion also, if necessary, by various media finding the lower border of the stomach, you will find displacement of the lesser curvature. This can be done in various ways, but if one would make a diagnosis of displacement of the stomach, it is very essential to have the patient in an upright position, and by giving four or five glasses of water consecutively, and then percussing the dull area after each glass of water, you will easily find displacement. Examination for the different splashing sounds is almost of as much importance in the diagnosis of diseases of the stomach as is the examination of the chemical contents. This splashing sound may be made on the abdomen with the knees drawn up; it may be 1 or 2 inches below the umbilicus. If you treat these patients for intestinal toxemia or for gastric symptoms alone you do not get results. They need some form of support. The operation for floating kidney is being done away with. Very few surgeons, as I understand it, are operating now for fixation of the kidney. The improvement you get is not by treating the kidney, but by treating the atonia gastrica; the best treatment of these conditions is by means of Rose's adhesive belt. I recall a case of ulcer of the stomach treated quite recently in which the treatment was preceded by severe hemorrhages, and only

after four weeks' treatment in bed, with rectal feeding for the first ten days, did all the symptoms disappear. The patient got up, but had a sort of toxic condition of the intestines, as was shown by an immense amount of flatulence. I applied a Rose belt, which relieved this. This treatment will relieve a great many cases of hyperchlorhydria. In treating cases of hyperchlorhydria, it is well to look for gastroptosis, and you will be surprised how the pains in the dorsal region of the back will disappear under an abdominal support.

In regard to the treatment by means of diet, that is very important. I make it a point to tell my patients to eat no meat whatever. I allow milk and eggs, but I believe, above all things, a vegetable diet, except in these cases of pronounced hyperchlorhydria, where a carbohydrate diet does harm, is preferable.

Dr. Mack (closing the discussion): I have nothing further to say, with the exception that I found the condition frequently in cases of atonic dilatation. So far as diet in cases of hyperchlorhydria is concerned, I find that I can use any carbohydrate diet just as well as I can a proteid diet, and with equally good results and without any distress to these patients.

GENERAL ANESTHESIA: SOME METHODS NOW IN USE*

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The horror which people manifest when anesthesia is suggested to them, suggested this paper. Is it ignorance and fear on the part of the public, or is it lack of confidence in giving the anesthesia on the part of the physician, which causes this abhorrence? I believe it is both. I was greatly handicapped in a fracture of the epicondyle in a child, where an anesthetic, to diagnose properly, was clearly indicated, but where the father bluntly refused, stating that what he objected to take himself, he would not have his child take. I have had similar trouble in other fractures.

The indications for giving it are generally clear, but the aversion of the public to having it administered and that of the physician to administer it or call someone capable is often the cause for its omission.

I have given anesthesia over a period of more than four years, both in this country and in Berlin, and had no fatalities or injuries occur as the result of giving it. A good many people are called on to give the anesthetic who are incompetent. One reason is, the surgeon considers this act a minor function, which he is able to supervise while performing his own and which really needs all of his attention. Another reason is, the surgeon thinks himself all important, considers the administrator of ether, who has the life of his patient in his hands every minute, only worth five dollars, and the patient having the same impression, an unschooled hand is usually called in. I have heard of an advertising alumnus who does rectal work have his colored uniformed janitor give it.

Statistics on fatalities are hard to obtain and are unreliable. Sonntag reports more than twenty cases of pneumonia caused by ether or chloro-

* Read at the Annual Meeting of the Crawford County Medical Society, Robinson, Ill., July 13, 1911.

form narcosis occurring in the Erlanger Frauen Klinik from 1887 to 1894, in 338 laparatomies. In 300 cases chloroform was used, and in thirty-eight, ether. After the employment of chloroform there were fifteen cases of pneumonia, four of which were fatal, or 20 per cent. After ether six cases with four deaths, 66 per cent.

McCown and Fountaine state that Leonhard Guthrie, in 1894, was the first to call attention to cases of delayed chloroform poisoning. In that year he reported nine cases in which death occurred within from ten hours to six days after operations were performed. The symptoms observed by Guthrie were, after a period of twelve hours or so, profuse vomiting, the vomit eventually blood stained and resembling the dregs of beef tea; restlessness, excitement and delirium alternating with apathy, jaundice and unconsciousness deepening into coma.

Wood, who quotes the statistics of ether and chloroform of Coates, Gould, Garree, Gurlt and others, covering several million cases, gives a mortality from chloroform of about 1 in 15,000 cases. Perhaps there are more deaths than are reported, since there is no law to compel assigning the anesthetic as cause. In *The Journal A. M. A.* I note the following: In a previous letter an account was given of the report of a committee appointed by the government to inquire into coroners' inquests. This committee has now issued a further report on deaths under anesthesia. The perils of anesthesia have attracted attention because of the great increase in the number of deaths under it in recent years. In 1866 the number of deaths registered as occurring in this manner was 5; in 1905 it was 55; in 1908, 235.

I have given chloroform three times in succession at intervals of four days without ill result. McCown and Fountaine report a case of death from yellow atrophy of the liver in a woman, where chloroform was given on two consecutive days.

Diminishing of the amount of chloroform or ether by drugs such as morphin and atropin or hyoscin and using the same as a routine measure is strongly condemned. The depression following, added to that of the anesthetic, is too profound to be safe, and in the few instances where I have given it, I have had unpleasant results. When heart affections are present neither chloroform nor ether are safe, and morphin is often used by surgeons to overcome that defect, no doubt with serious results in many instances, and deaths have been reported by competent anesthetizers. The narcosis where morphin is given becomes too profound, even with a careful anesthetist, and before he realizes it the overdose has been given. It masks the most valuable symptom, namely, pupillary reaction, and the vomiting, which has occurred in my patients, was not less embarrassing; but the greatest harm is done by paralyzing all reflex centers; the secretions collect in the trachea and breathing ceases.

Scopolamin and Morphin as a Preliminary to Anesthetics.—Collins reports that he uses a combination of 1/100 grain of scopolamin and 1/6 grain of morphin as a preliminary; he states that some of the things expressed are erroneous, which his experience seems to prove. Much of

the misinformation has come from the failure to differentiate the use of the combinations as a general anesthetic, in which the dose is generally small. His report is based on 1,120 cases.

Rückert usually gives, the evening before the operation, 0.5 gm. veronal, one hour before the operation an intramuscular injection of 0.0004 gm. of scopolamin, and a half hour later 0.0002 gm. of the same with 0.01 gm. morphin, followed with chloroform or ether. He reports the experience with 114 patients anesthetized in this way, however, not having used the same dose in all cases. His verdict is favorable; in two cases there was some anxiety; both were uterine cancer cases, and in the first the patient ceased breathing, although the heart kept beating regularly. Not until forty-five minutes of artificial respiration and stimulants was respiration restored. In the second case there was violent delirium for an hour after the patient roused from the anesthesia. There was no asphyxia in any case; the respiration was regular and shallow; the pulse frequently irregular and often slight cyanosis. The euphoria on rousing was striking. There was no vomiting afterwards in seven cases, and only slight vomiting in thirteen. The pain and restlessness increased regularly towards night so that another injection of morphin was necessary. Although I do not consider the result warranting the procedure, in the following it is less so.

Rinne's experience confirmed the advantages of this method of preparing the patient for an operation until two fatalities within three days warned him of its dangers. The cardiovascular system in these fatal cases was below par, and henceforth he will use a smaller dosage in such cases.

Debet and Dupont with 120 patients gave a dose of scopolamin as a preliminary to chloroform. The list includes two fatalities and one post-operative syncope, besides a number of other mishaps. They refer also to Flateau's one fatality in thirty cases, Ziffler's three in sixty-four and Blo's several serious mishaps and one death in 105 cases. They declare that it not entirely does away with vomiting and that it is unquestionably toxic for patients with emunctories out of order.

General Anesthesia with Part Circulation Cut Off.—Berri reports sixty-three cases in which an Esmarch bandage was applied to the legs, arms or both to exclude these members from the general circulation. The amount of chloroform necessary for major operations thereafter was much less than with other technics, thus lessening materially the toxic action of the anesthetic. The first phase of the anesthesia was shortened, the nerve centers feeling the effect of the anesthesia remarkably early, and the patient rousing afterwards much quicker. No by-effects were observed. In one case there was paralysis of one limb afterward, but the one to which the constriction had not been applied.

Klapp, who is assistant at Bier's clinic, Berlin, declares from his experience with the application of constricting bands high on the thighs that time is proving the value of this method of damming off part of the circulation. Far less of the anesthetic is required. He first applies a constricting band to collect a certain amount of blood in the legs and

over this he applies a tourniquet to shut off the blood effectually as with an Esmarch bandage. He orders the patient to breathe deeply and tranquilly; the room should be perfectly still. Then from 10 to 20 c.c. of ether is given all at once, which is enough for fifteen minutes' anesthesia. For longer operations he gives 20 to 30 c.c. at once and then 10 c.c., continuing with the drop method.

Franke has applied the Esmarch bandage to the thighs or arms or both as a preliminary to chloroform anesthesia according to Klapp's suggestion, and has been impressed with the advantage of thus shutting off the blood in these regions from the influence of the anesthetic, the anesthetic used being much smaller in amount. The method cannot be used in varicose veins or eczema, joint or bone affections; it will evidently have to be restricted to healthy and vigorous limbs. The salutary features were the patient's passing under easily, the early rousing and no vomiting following. A slight transient nervous disturbance was observed in one case in which the band had been left in place for two hours on both legs, and Gräfenberg has recently reported thrombosis in six out of seventy-five cases in which the Klapp method was used. The disturbances prove slight and transient, but they warn that vessels distended with blood are more liable to injury than where the Esmarch bandage is applied to a bloodless limb.

Donati reports the Klapp method in seven cases in general chloroform anesthesia. Thrombophlebitis developed in three cases, while he witnessed nothing of the kind in his cases under ordinary technic. This experience he says confirms that of Gräfenberg in which six out of seventy-five cases developed thrombosis, but only one in a series of seventy-five with ordinary technic. He also states with part of the circulation shut off the tendency to vomiting seemed lessened, yet this advantage was counter-balanced by the sense of weight and tingling in the legs the first few days after the operation.

Intravenous General Anesthesia.—Giani reports from Durant's clinic at Rome two cases in which a large angiosarcoma of the lip or a benign tumor in the hypophysis was removed under chloroform administered in salt solution saturated with it. Injection was made into the saphenous vein about 4.5 cm. from its junction with the femoral. About 55 c.c. were allowed to flow into the vein the first minute; 1,000 c.c. were used in all in the first case, representing 6.6 gm. The anesthetic lasted forty minutes; seven minutes after cessation of the infusion the patient roused. Traces of albumin were found in the urine during the first day, but it was normal again the next morning. This albumin was not attributed to the method, but to the condition of the patient. There was no tendency to vomiting in either case. The relaxation was complete by the fifth minute, and by the fourth in the second case. In the latter 1,500 c.c fluid, with 9 gm. of chloroform, was used, during the seventy-five minutes required for the operation, the patient rousing in five minutes. When the anesthesia was complete the infusion was suspended until the cornea warned that more chloroform was required. He was

favorably impressed with the method, its harmlessness and advantage of technic for head and throat operations.

Ritter injected cocain into a vein, producing complete anesthesia. He made experiments on dogs and noticed disagreeable by-effects in only a few; none died.

Burkhardt is convinced that there is no necessity for the anesthetic to travel through the organs to the blood, and the best results will be obained introducing the drug directly into the circulation. In thirty-three clinical cases he injected a 5 per cent. solution of ether like a saline infusion, the amount ranging from 200 to 800 c.c. There were no disturbances in breathing, no cyanosis, vomiting or retching in thirty cases; three of his cases had nausea or vomited twice. In another series of eight cases he injected a mixture of ether and chloroform or a 7 per cent. solution of ether; transient hemoglobinurea developed in one of these cases. The patients were tranquil and free from reflex action; the blood pressure did not fall even during long operations. An overdose he states is scarcely to be feared, recovery more rapid and no by-effects. He generally precedes the intravenous infusion with a scopolamin morphin twilight sleep.

Janssen refers to Burkhardt's announcement and states that he has been conducting extensive research in this line, using various anesthetics and technics, but on the death of one dog from embolism in the lung has now entirely abandoned this method.

Pikin relates his experience in fifteen cases with intravenous general anesthesia which were all favorable, but the sixteenth patient died in a few moments after the infusion. Burkhardt's technic was strictly followed, but the method has been abandoned since this mishap.

Terminal Arterial Anesthesia.—The anesthesia employed by Ransohoff is induced by the injection of cocain solution directly into the artery supplying the area to be anesthetized. It is applicable only to a certain group of cases in limited areas of the body. The nature of the anesthetic is terminal—that is, the cocain is carried to the individual nerve endings. The solution is diffused through the capillary walls into the surrounding tissues, and very little if any is returned by the veins to the general circulation. The greatest advantage, he states, is its safety, which depends on the small quantity of the dilute cocain solution used and its probable diffusion into the tissues.

Anesthesia by Colonic Absorption.—The colonic method of administration of ether is more complex than the pulmonary in general and requires from the anesthetist a broader appreciation of the physiologic factors involved. For this reason alone its field of usefulness is limited to cases in which it presents distinct advantages over the pulmonary method. It is therefore not a method adapted to experimental use of the tyro, but rather a valuable addition to the armamentarium of the trained anesthetist. The indications for its use, according to Fulton, are: Operations on or about the respiratory tract, such as lay open the mouth, larynx, pharynx and trachea, when ether absorption must be minimized

on account of lung, heart or kidney lesions. The contraindications are lesions of the alimentary tract.

There are other forms in which anesthesia is obtained, but the evidence in those pointed out undoubtedly shows that even the most successful have trouble with the newer methods, mostly from overdrugging and the attack upon delicate organs; and if I have not succeeded in pointing out the dangers to the patient's life, I have failed in my purpose.

Traumatic Surgery.—In these as in other cases the anesthetic gives the best result which is the most satisfactory in the hands of the anesthetist. In a report of Torrance where the opinions of others were collected, ether, chloroform and nitrous oxygen were applied with modifications, Haggard writes as follows: The advances in the use and perfection of nitrous oxid anesthesia since the report of the anesthesia commission on this subject at the meeting of 1908 seem to consist in the following:

1. The employment of this agent with modification as the routine anesthetic in several of the larger clinics of this country.

2. The demonstration clinically and experimentally of the advantages of nitrous oxid and oxygen over ether in the prevention of shock, the conservation of immunity and its value in the case of the handicapped patient. (Crile.)

3. The establishment of rebreathing of nitrous oxid and oxygen for two or three-minute periods as harmless and beneficial, with the great reduction in cost of this anesthetic. (Gatch.)

Children take chloroform well, and as their heart and lung conditions are good, there is not much danger from that source. However, the reflex centers are quickly blunted and even paralyzed, and there is danger from inhalation. I would be unwilling to give chloroform or ether to a small child for a long period.

The aged take general anesthetics badly and Gleason uses partial scopolamin anesthesia, combined with sterile water infiltration anesthesia in operating on the aged. He says that the aim should be to produce complete sensory paralysis of the part.

The diet before anesthesia is best restricted entirely for at least half a day in a hospital. In private, especially when women are told not to eat for six hours, they eat anyway; and I would allow them a very light meal, not milk, two hours before operation. One woman became asphyxiated through vomiting after eating chocolates during her fasting period and was only revived after hard labor; another slipped to the kitchen just as we were entering the front door and drank a glass of milk; she vomited profusely without any other ill result. Children should be allowed light food in small quantities until an hour before operation.

In giving chloroform or ether I start by gaining the patient's confidence, which is important, telling the patient to fear nothing, calmly go to sleep and breathe deeply. The inhaler is placed well over nose and mouth and at first I shut off as much air as possible with a towel,

which I later remove. The head is placed sideways and a few fingers behind the ramus press the lower jaw forward; this keeps the tongue always against the teeth and I am hardly ever called on to use a tongue forceps. The anesthetic is rapidly given at first and when the patient begins to go under watch the reflexes. Do not touch the cornea, merely draw down lower lids and see how much pupils react, also how resistant the eyelids are. I always keep the patient on the point where pupils slightly react; this is easily accomplished after a little practice, when one can feel his way and know just how much to give. When the patient breathes deep and stertorous there is little danger and he comes through in good shape as a rule; where the respirations are weak, give less and allow more air; the mask may be lifted away for that purpose.

While in Berlin I was frequently giving anesthetics for Dr. Gottschalk, a gynecologist. He started his patients on chloroform, to get the patient under more quickly; there is less choking and struggling, which is valuable, since very often too deep a narcosis is obtained through too deep inhalations. When the patient is well under, ether is given and kept up. I have found this a safe procedure. We always left one arm uncovered for guidance as to pulse, the radial artery being more reliable than the facial. By giving a narcosis no larger than necessary the patient comes out well and there is slight or no vomiting.

MODERN INDICATIONS IN THE TREATMENT OF HEART DISEASE *

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In this brief review it will not be my object to attempt to cover the subject with any degree of thoroughness. I shall try merely to emphasize a few of those points that seem to me of the greatest practical importance.

In no condition is routine treatment more dangerous than in heart disease. Here, if ever, we must treat each case according to its individual needs; we must remember that no two cases are alike and that we are treating not the disease but the patient. Still, certain general principles form the basis of all rational treatment.

HYGIENE

Rest.—The fundamental indication, in all cases of broken compensation, is rest. In acute cardiac disease or in badly broken compensation the most complete rest possible is demanded. The patient is put to bed, allowed to see no visitors and, so far as possible, allowed to make no unnecessary movement. Where compensation is less impaired such strict quiet is not necessary and the value of carefully graduated exercise in the development of compensatory hypertrophy is generally recognized.

* Read before the Medical Society of Pike County, Ill., July 27, 1911.

Nevertheless, of the two, it is safer to err in the direction of quiet. The brilliant results obtained at various health resorts are due, I am convinced, to a great extent, to this factor. Some years ago I had occasion to spend several months at Nauheim, in Germany. Cardiac patients from all over the world flock to these springs, take the carbonated baths under careful medical direction, and usually receive little or no medication. On the whole they do extraordinarily well and leave deeply impressed with the value of the carbonated baths. Now, it is notorious that in general practice these baths, although they can be reproduced in the home with a fair degree of accuracy, produce no such uniformly good results. This has been my experience to such a degree that I have abandoned their use. I am convinced that the good results obtained at Nauheim are due to other factors. The patients having made a long journey, at a considerable expense, are willing to devote their entire attention to getting well. They are separated from family, friends and business, have no distractions or temptations; they rest or exercise, eat and sleep exactly according to the physician's directions. We all know how difficult or impossible it is to secure such obedience at home. The nearer we can approach it, the better will our results be and the more frequently we can dispense with drugs.

Diet.—With a bad heart, it is just as important to reduce the work of digestion to a minimum as to demand muscular quiet. In very bad compensation, the best diet is that originally advocated by Carel for obesity. It consists in the strict limitation of food and drink to one quart of milk a day, a tumblerful being given every three hours. Literally nothing else is allowed to pass the lips. This is, to be sure, a starvation diet and should be kept up not longer than four or five days, but the small demands it makes upon the digestive tract, and secondarily upon the kidneys and heart, aid greatly in the restoration of function of the last organ. Later, when a more generous diet is allowed, it is a mistake to persist too long in the administration of liquid and soft foods; and this for several reasons. These soft and liquid foods, especially if albuminous, cling to the interstices between the teeth and in the folds of mucous membrane, decompose there and lead to the foul mouths with coated tongues that we so often see in these patients. Nothing cleanses the mouth so well as the thorough chewing of a cracker or a piece of toast or stale bread. Moreover, a soft food, such as milk toast, is swallowed with little or no chewing; there is practically no salivary digestion and the work of the stomach is thereby increased. It is usually far better to give the milk and the toast or crackers separately than soaked together. Finally, the work of Pawlow has shown that palatable foods are far more readily digested in the stomach than unpalatable ones. The patient, when he is on the mend, should, if possible, be given the sort of food he likes best, in small meals, carefully prepared and thoroughly chewed.

Sleep.—Above all, the cardiac patient must have sleep. Patients with broken compensation often lie awake night after night, so that as evening approaches they are in an agony of apprehension at the prospect of another sleepless night. No drug, no treatment will be of any avail

unless they sleep. A large number of soporifics is at our command, from the bromids to the latest German synthetic, but often enough nothing will avail but morphin. The latter may sometimes be effectively given in broken doses by the mouth, say one-twentieth grain every two or three hours, but the most certain results are obtained by the hypodermic administration of one-sixth, one-fourth, or even one-half grain at bedtime. The good results obtained from a succession of good nights rival those produced by our most active cardiac tonics. We need have little fear of establishing the morphin habit in these cases. They readily dispense with the drug as soon as they find themselves able to sleep without it and even where it must be continued we need have no fear as it is given only once daily. I have now under observation a patient, a physician, who for nearly three years has taken one-fourth grain hypodermically every evening. It is still fairly effective. Sometimes, however, its sleep-producing power wears off, so that even one-half grain excites rather than soothes the patient. Then indeed we may be at our wit's end to give him sleep. Paraldehyd in tablespoonful doses sometimes acts where all else fails. Such cases, of course, are those hopeless ones of advanced myocardial degeneration in which all we can do is to keep the patient reasonably comfortable.

Exercise.—When the heart with broken compensation is on the road to recovery, carefully graduated exercise is a valuable means for the production of hypertrophy. At first, arm or leg exercises in bed, later, walking on the level or up hill, still later various mild sports; the character of the exercise is of less importance than the amount. At Nauheim a complicated system of so-called resistance exercises has been developed and produces good results, but as it requires a trained attendant, it cannot ordinarily be utilized. Nor is it necessary. The crucial point is that, certainly at first, the patient's exercise should be watched by a companion who stops him as soon as a flushed face, or slightly rapid respiration indicate that he is approaching the danger line. With this proviso any sort of exercise that appeals particularly to the physician or the patient may be used with equal benefit.

DRUGS

It is by no means always easy to determine the therapeutic value of a drug in heart failure. Whoever looks through the literature, whether in the journals or in the text-books on therapeutics must be surprised at the long lists of drugs that have from time to time found favor as cardiac tonics. And yet careful pharmacologic work has shown definitely that none of them are worth serious consideration except digitalis and strophanthus. The reason for this confusion is not far to seek: it is the same confusion that has been so fruitful of error in other departments of therapeutics. We put a patient with heart failure to bed, feed him carefully, see that he sleeps well and that his bowels move satisfactorily and give him, say, strychnin, or spartein, or convallaria. If he does well we are apt to ascribe the improvement to whatever drug we happened to use, without reflecting that the same results

might have been obtained by our hygienic measures, without the use of any medication whatever.

Of these drugs, strychnin is the one that has arrogated to itself the greatest amount of undeserved credit. Until recently a physician's first thought, when facing a sudden attack of heart failure, was a hypodermic of strychnin. For years our surgeons were in the habit of giving strychnin as a routine measure after operations. Of late many of them have discontinued the use of strychnin and I am sure their patients have not suffered. In large doses it seems to increase the tonicity of the heart, as was shown by the animal experiments of Cameron, but in therapeutic doses it has little or no effect. Its use as a routine measure should be abandoned.

Digitalis.—It is far otherwise, I need hardly say, with digitalis. While other cardiac drugs have risen and fallen in the estimation of the profession, digitalis has always remained securely at the head of the list. Of its great variety of preparations, several have peculiar merits that distinguish them from the others, but each has also certain faults that have prevented it from displacing its rivals. It may be worth while here to point out a few of the advantages and disadvantages of some of the more frequently used preparations.

The powdered leaf has always maintained its popularity, especially abroad. It exerts the full digitalis action, at its best acts powerfully and is cheap. On the other hand, it deteriorates with age, is absorbed slowly and uncertainly and is very apt to cause gastro-intestinal disturbance.

The infusion has the same merits, but may be nearly inert if carelessly prepared, deteriorates rapidly and is often badly borne by the stomach.

A good tincture, made with 70 per cent. alcohol, is much more stable and is probably the best of the cheaper preparations. It is also irritating to the stomach and in common with the preparations already mentioned cannot be given hypodermically. It has sometimes seemed to me that its diuretic action was not so marked as that of the powdered leaf or the infusion.

The various digitalins on the market differ greatly in activity, some of them being comparatively inert. One of the best is a French preparation of crystalized digitalin, prepared in small granules by Nativelle. It is very active, very constant in its activity and stable, but cannot conveniently be given hypodermically.

The most nearly perfect digitalis preparation is due to the work of Gottlieb and was by him called digipuratum. By means of a series of extractions he freed the leaf from its irritating constituent, digitonin, and from the inert bulky resins that make up much of the ordinary extract. The resulting yellowish liquid is carefully standardized and taken up by sugar of milk in such proportions that the resulting powder has a definite therapeutic strength. Digipuratum is very stable, constant in its activity and not irritating to the stomach. It is, however, unfortunately very expensive and cannot be used hypodermically.

One drawback is common to all of these digitalis preparations. They are so slowly absorbed that we cannot count on any effect on the diseased heart until twenty-four hours after their administration was begun. Where a more rapid action is desired we naturally turn to the hypodermic syringe. Here the various digitalins will usually be found disappointing. Digitoxin is a much more active substance but is so irritating that it cannot be given hypodermically without causing great pain. A convenient solution is Cloetta's digalen, which is a solution of digitoxin, one cubic centimeter being said to contain one milligram of the drug. Given intravenously its action is very prompt and certain; by mouth, contrary to the statements of the makers, it presents no superiority over other forms of digitalis.

The secret of the successful administration of digitalis lies in pushing the drug to the limit of tolerance for the first few days. A drachm of the tincture, four tablets of digipuratum, three Nativelle granules or corresponding amounts of the other preparations may be given daily until nausea, distinct slowing of the pulse or irregularity, due to heart-block or extra systoles, show that the limit of tolerance has been reached. The drug may then be discontinued for a day or two and then resumed in smaller dosage. The mistake is far more frequently made of giving too small, than too large doses.

Strophanthus.—Next in importance to digitalis as a heart tonic comes strophanthus. But here we meet a paradox. The tincture of strophanthus is pharmacologically far more potent than the tincture of digitalis. In practice, however, it is much less active and very uncertain in its action. So much so that it may sometimes seem inert while at other times toxic symptoms arise from comparatively small doses. The explanation seems to be that it is slowly absorbed and easily destroyed in the digestive tract, so that it is never possible to say how much of the drug ingested will actually reach the circulation. Moreover, the therapeutic dose is very near the toxic dose. For these reasons the administration of strophanthus by mouth should be abandoned.

It is far otherwise with its active principle, ouabain or strophanthin. While so irritating that its hypodermic administration is exquisitely painful, it may be given by deep intramuscular injection or, better still, intravenously without discomfort and with prompt results. I am in the habit of using a sterile solution put up in sealed ampules by Boehringer. No cardiac stimulant at our disposal is at once so powerful, certain and prompt. The effect of the injection can usually be noted in ten to fifteen minutes. I have more than once seen it call back to life an apparently moribund patient. It should form a portion of every physician's and especially of every surgeon's equipment.

Like all strophanthus preparations, however, its therapeutic dose lies dangerously near the border-line of toxicity. Once a milligram has been given no more strophanthin or digitalis should be given for at least twenty-four hours. This, however, has its advantages. We have at least the comforting feeling that while there may remain many

other things to do for the desperately sick patient, the matter of cardiac stimulation need not concern us for the present. What the injection of strophanthin fails to do no other cardiac stimulant can accomplish, and we can calmly await the morrow secure in the knowledge that we have done everything possible in the way of cardiac stimulation.

INDICATIONS FOR TREATMENT

As in all the realms of medicine, so also in diseases of the heart, rational treatment presupposes accurate diagnosis. And by this term we do not to-day mean merely an anatomic diagnosis but what is usually of far greater significance, a functional one. Thus the diagnosis of mitral insufficiency has but little significance. What is really of importance to physician and patient is the answer to the questions: "Is the leak so great as seriously to handicap the circulation?" and "Is the heart muscle in a condition to respond to the demand for extra work necessitated by the valvular lesion?" Modern methods of diagnosis enable us to answer such questions with a fair degree of accuracy and it is for this reason that the more refined methods of cardiovascular diagnosis have a practical importance.

Valvular Lesions.—Once these questions have been answered, the treatment of valvular disease becomes simple in principle, though it may be difficult enough in the concrete case. Where the lesion is slight and the heart muscle in good condition, the individual need hardly be considered as ill. We have all of us seen men with a slight mitral leak or aortic stenosis who were able to perform without fatigue or dyspnea an average day's work and who, indeed, often never suspect that they are imperfect physically until a life insurance or military examination brings it home to them. Such individauls obviously require no treatment. Where the lesion is more serious but the myocardium relatively healthy, care must be taken to maintain the integrity of the heart muscle. Such patients must be made to realize that they are relatively crippled, they must choose a mode of life at a lower physical level than that of their more perfect mates and an occupation that makes no undue demands on the injured heart. Under such circumstances they may live comfortably for years, without medication, until the ultimately inevitable break in compensation occurs. It is when the heart muscle has become incompetent that the real treatment begins along the lines already referred to. While the general principles of treatment may be sketched, the precise indications vary with the individual cases, many of which demand of the physician the exercise of the highest degree of judgment. In general it may be said that the prognosis in the concrete case depends far less on the degree of heart-failure than on the integrity of the heart-muscle. Where the muscle fibers are relatively intact, the heart usually responds readily to proper treatment and apparently marvellous cures may be effected. Where the muscle fibers themselves are badly diseased, much less satisfactory results are obtainable and all we can usually do is to prolong life and to keep the patient as comfortable as possible. This brings us to the consideration of myocardial degeneration as such.

Myocardial Degeneration.—Until recently this group of cardiac affections was lumped together under the term myocarditis, and but little attention was paid to it. The graphic methods, especially work with the cardio-sphygmograph and the electrocardiograph, have thrown a flood of light on the hitherto obscure processes at work here and to-day the literature teems with investigations in this field. The most interesting cases are those characterized by an irregular pulse. Superficial observation may lead us to lump these cases together, but careful study enables us to distinguish myocardial lesions that differ radically in significance and in treatment.

The simplest cases are those of so-called "sinus irregularity." This is the irregular pulse occurring chiefly in children either spontaneously, especially about puberty, or more frequently after acute infectious diseases. Here auricles and ventricles beat, the latter in normal sequence after the former and the irregularity is due to the fact that the normal stimulus to contraction reaches the auricles at irregular intervals. Such cases require no treatment, unless it be some restriction in excessive indulgence in athletics. Obviously, however, if we are to avoid disaster, these cases must be distinguished from those of irregularity due to real myocardial disease, a matter in which pulse tracings are useful, though perhaps not indispensable.

Next in degree of mildness, come the irregularities due to extrasystoles. Normally, as is well known, the heart beats regularly because after each contraction the muscle is refractory to the constant stimulus to contraction exerted on it by the circulating blood. With beginning diastole the muscle begins to grow more and more sensitive until after a very constant interval the auricles have become sufficiently sensitive to respond by a contraction. This contraction causes a stimulus to pass down the bundle of His, whereupon the ventricles, too, contract. If, however, for any reason, auricles or ventricles have become hypersensitive, they respond before they have been completely rested and we have a small contraction out of turn. A considerable variety of irregularities may result according to the degree of hypersensitiveness and the location of the hypersensitive area; in the commonest form we have a fairly regular pulse with an occasional stumble, as it were. The clinical interpretation of this condition is often a matter of difficulty. Sometimes, it is unquestionably merely the manifestation of a neurosis and requires no treatment whatever. At least as often, however, it is due to a myocardial affection which cannot be neglected with impunity. In general it may be said that this kind of irregularity is not pathognomonic of heart disease. Other evidence of myocarditis must be present before the diagnosis can be made. Then the treatment must be along the lines already sketched, but in general it must be admitted that much good can not be expected from cardiac stimulants and our main hope for improvement lies in non-medicinal measures.

A still graver and not less interesting cause of cardiac irregularity is auricular fibrillation. Here disease has rendered the auricular tissue so hypersensitive that instead of contracting rhythmically, its little

groups of muscle fibers contract constantly and independently so that it is in a constant state of tremor, as it were. Some of these little partial contractions pass down into the ventricle, causing it to contract. The ventricles thus beat rapidly and irregularly and we feel at the wrist a jumble of irregular contractions, some strong, some weak. It would lead me too far to discuss this interesting condition in any detail; suffice it to say that such a heart is naturally seriously impaired and readily becomes incompetent. Fortunately, however, it is in just such cases that digitalis sometimes acts most triumphantly. The rapid pulse, while still usually irregular, becomes slower and stronger and the patient, who seemed and was at death's door, recovers with marvelous rapidity. Unfortunately, recovery is not permanent. Sooner or later the inevitable relapse occurs and each relapse responds less readily to treatment than its predecessor.

A much less frequent cause of cardiac irregularity is heart-block. Here we have a disease of the apparatus that conducts the stimulus from the auricles to the ventricles. The former contract normally, but every now and then a stimulus fails to pass through the diseased tissue down to the ventricles, so that the latter miss a beat. In the mildest cases, this dropped beat comes at long intervals, sometimes every second, third or fourth beat is dropped with some irregularity. When the conducting apparatus fails entirely to act, the auricles and ventricles beat independently of each other. In that case the pulse is regular, but usually very slow. Like all the other kinds of irregularity, this type can best be diagnosed by means of venous and arterial pulse tracings, although the skilled observer can dispense with instrumental aid. It is of interest to us here, because in this condition digitalis and strophanthus are absolutely contraindicated. They impair still further the function of the already diseased conducting apparatus and may seriously aggravate the patient's condition.

We thus see that in some forms of heart disease, digitalis and strophanthus are unnecessary, in some they avail but little, in some they are indispensable, in some they do harm. The importance of accurate diagnosis as a preliminary to treatment is obvious.

Metropolitan Building, St. Louis.

THE OUTLOOK FOR THE MEDICAL PROFESSION FROM LEGISLATIVE AND ECONOMIC VIEWPOINTS.

CHARLES J. WHALEN, M.D., LL.B.,

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CHICAGO, ILL.

Another year has passed and the time has come to take account of stock. It pays at certain definite periods to look over our records and note the evidences of progress or failure, in order that we may the better plan for the future along economic and legislative lines as well

as in matters purely scientific; indeed, if the scientific is to endure on a high plane the economic status of our profession must be safeguarded.

During the year another session of the State Legislature has been held and the work of the Public Relations Committee of the Chicago Medical Society and Legislative Committee of the Illinois State Medical Society was extremely strenuous, perhaps only slightly less so than during the Forty-Sixth General Assembly. The Forty-Sixth was the most obstinate assembly the medical legislative committees ever encountered. That year the efforts made by the profession to defeat the persistent inclinations of the legislators to pass vicious medical measures was the most herculean task ever undertaken by the profession in this state. The experience gained at that session prompted the Public Relations Committee of the Chicago Medical Society at its close to make to the Society the following recommendations:

First—That it is absolutely essential as a matter of self-preservation for the profession to thoroughly organize, so as to be in the best position possible to head off at future sessions the pronounced tendency on the part of members of the legislature to lower the standard at present required of medical licentiates.

Second—That by organized effort the medical profession do its utmost to help return to the legislature every gentleman seeking renomination and re-election who voted with us at the last session in our attempt to prevent class medical legislation.

Third—That the profession do everything within its power to defeat those who opposed it in its efforts to secure legislation clearly in the interest of the people.

Fourth—That before the primaries of the respective political parties, the Public Relations Committee of the Chicago Medical Society ascertain the attitude of the various prospective legislative candidates along the lines of a uniform medical practice act. That the information thus obtained be transmitted to the physicians residing in various senatorial districts in order that the information obtained might be advantageously used on primary and election days for or against certain candidates.

These general policies were adopted and ordered put in operation in Cook County; later the Public Relations Committee of the Chicago Medical Society induced the legislative committee of the State Society to adopt its recommendation, thus making these policies operative in all counties of the state.

The wisdom of better organization, more alertness on the part of the profession and of beginning our work before the primaries and elections rather than after or while the Legislature is in session and perhaps at a time when many members have already pledged themselves for certain bills, is apparent from the following: In Cook County 75 per cent. of the candidates before the primaries signed a pledge to the Chicago Medical Society in which they agreed to vote to maintain a uniform method of admission to the practice of medicine. In Illinois outside of Cook County over 60 per cent. of the candidates before the primaries signed a similar pledge to the Illinois State Medical Society.

As a result of early activity on the part of the committees named a number of men who opposed us at previous sessions failed to be renominated, a few others got back by narrow majorities; in a few instances men who at previous sessions furnished the brains and sinews of war for the proponents of vicious medical legislation when they saw us digging their political graves surrendered, signed the pledge alluded to and agreed to vote in the future along lines mapped out by the organized medical profession.

A summary of the bills of interest to the profession presented at the last session of the Legislature is as follows: The Forty-seventh General Assembly opened with the regulation number of objectionable medical bills, conspicuous among which was the osteopathic bill, known as House Bill No. 380. This was killed in committee, a much easier victory than in previous years. The osteopathic old guard men who sponsored and stood behind similar measures in previous years were conspicuous by their absence because of the terrific bombardment given them before the primaries and election by their medical constituents.

The optometry bill, known as Senate Bill No. 140, with its counterpart in House Bill No. 121, met its Waterloo in the Senate, where it was defeated because it was only able to muster fourteen votes, twenty-six votes being necessary to pass it.

There was passed at the last session House Bill No. 608, known as the school nurse bill. This measure escaped the attention of everyone until it was enacted, the oversight being due, no doubt, to the deception in its title, which read: "For an act to add a section to an act to establish and maintain a system of free schools." It was a most vicious piece of medical legislation, equally if not more objectionable than the osteopathic and optometry bills we have been fighting for years. It permitted school nurses to assume the functions of physicians without having them qualify as such; further, it did not prescribe that they should qualify even as nurses. The Public Relations Committee of the Chicago Medical Society and the Secretary of the State Board of Health pointed out to Governor Deneen the many serious defects in the bill, and His Excellency promptly vetoed it. For doing so Governor Deneen is entitled to the commendation of the medical profession of Illinois.

At the last session there failed to pass Sec. 6 A, that portion of Senate Bill No. 235 which was framed to better the administration of the medical practice act and thereby better protect the public. If adopted it would have given the State Board of Health authority to revoke for cause licenses issued before 1899 as well as those issued since that date. At present no matter what crime or unprofessional or dishonorable act may be committed by a practitioner, the State Board of Health has no power to revoke his license providing it was issued between July 12, 1877 and June 30, 1899.

The opposition to Section 6 A of the bill came, as in 1907 and 1909, from medical advertisers and certain newspapers who in the first instance were afraid of prosecution by the State Board of Health and in the latter from fear of the loss of advertising. These influences, therefore, were

sufficiently powerful to kill this bill and a similar one at the last three sessions of the Legislature, but the height of the ridiculous was reached when a certain county medical society formally instructed its representatives to do their utmost to prevent the enactment of Section 6 A of Senate Bill 235, or that portion of the bill which proposed to give the State Board of Health jurisdiction alike over all medical licenses, that is, licenses issued previous to 1899 as well as those issued since that date. "Consistency, thou art a jewel." So until the next session of the Legislature in 1913 the advertising medical gentry will continue to practice unmolested. They are free to go from town to town seeking whom they may devour, deceiving and swindling the public, promising cures that can't be effected, collecting cash and notes (the latter speedily discounted in a local bank) for treatment that is not given.

Yea, more, at the last session there was passed House Bill No. 311, the enactment of which was the greatest blow ever delivered the medical profession of this state. This law removes every possible means formerly possessed by the State Board of Health for the suppression of quackery. After July 1, 1911, unlicensed practitioners can practice medicine without fear of prosecution. Under this new law all fines heretofore used for prosecuting quacks must be turned into the state treasury. The regular appropriation of the State Board of Health contains a provision that no portion of that appropriation shall be used for attorney's fees, and on the other hand the attorney general holds that it is not the statutory duty of state's attorneys to bring suits for violations of the medical practice act. The Public Relations Committee of the Chicago Medical Society saw the viciousness of the enactment of such a law and with the assistance of the State Board of Health did its utmost to defeat it, but to the discredit of the medical profession, it lent no assistance. The bill was practically ignored by the profession. The law in its present form is a thousand times more detrimental to organized medicine than the osteopathic, optometry and all quack bills combined that have ever been introduced into the various legislatures in the last decade. At the present time it is not necessary for a practitioner to even take out a license, nor is it necessary even to have attended a medical college in order to practice medicine in the State of Illinois, for, beginning July 1, 1911, the State Board of Health will be unable to prosecute violators of the medical practice act. The medical profession without even a protest allowed the State Legislature to completely emasculate the medical practice act in Illinois, and physicians have no one to blame for the conditions but themselves.

At the last session there failed to pass House Bill No. 493, known as the birth and death bill. It received but sixty votes against seventy-seven required. Accurate registration of births and deaths is one of the necessities of modern sanitary science. In Chicago, for instance, only about 30 per cent. of the births are recorded, and as a result no comparison can be made of the city's birth rate with that of any other city, or of the birth with the death rate. Every country and city in the old world has careful registration of births and deaths. The bill was the

model one suggested by the United States Census Bureau, and endorsed by the American Medical Association, the Illinois State Medical Society and the Chicago Medical Society. It should have become a law, for Illinois is woefully behind in this matter.

A careful analysis of proposed medical legislation at the last session shows that the bills that the profession opposed most actively (osteopathy and optometry) were defeated, and those to which the profession lent only its moral support failed to pass; for instance, vital statistics, and that portion of Senate Bill No. 235 which would give the State Board of Health jurisdiction alike over all medical licentiates. In other words, on account of the apathy of the profession there was enacted House Bill No. 608, permitting school nurses to assume the function of physicians without qualifying therefor; also House Bill No. 311, which completely emasculates the medical practice act in that it renders the State Board of Health powerless to prosecute quacks, unlicensed practitioners, etc.

Medicine as a means of livelihood has arrived at the most critical period of its history. The very existence of the doctor is at stake. Survival of the fittest is the issue of the day. The economic status and outlook for the profession is pitiable. The future, it would seem, is a long road full of many pitfalls, with many hard bumps in store for the physician.

In this country the average annual income of the doctor has recently been placed by competent authorities at $700 a year, or about $2 per day. I am constrained to believe that these are not far from the real figures. Is it not time for the profession to be up and doing?

Economic conditions are admittedly not as favorable to-day as they were ten or twenty years ago. The earnings of a large proportion are less than those belonging to organized labor. This is especially noticeable when we compare the declining earnings of general and contract practitioners with the advancing earnings of artisans. Is it either consistent or proper that highly educated, well trained men who have spent many years at a heavy pecuniary cost acquiring particular knowledge and skill for this at best arduous profession must be forced to subsist on a pittance that a miner or mechanic would reject with scorn? The cost of living and the necessary professional equipment are too high when compared with the compensation most physicians receive. Society cannot afford to support its physicians indecently. It demands of them a certain standard of living but does not pay them liberally enough to maintain that standard. Is it any wonder that so many of the profession have drifted into various cults and pathies where the prospect of a decent remuneration is greater, all this in violation of the principles of the code of ethics held out by the regular schools? It is easy to be ethical if your stomach is fully at peace with the world. In the practice of medicine men do not cease to be human and in this work as in every other the law that declares that "self-preservation" is the first law of nature is frequently a defense and shield for an infraction of the so-called code from economic necessity.

Let us study the signs of the time for a moment. Sanitation and preventive medicine are reducing disease materially. Hygiene, not

medicine, is the slogan of the day. Prophylaxis, not cure, is the watchword. The work of the physician will finally be eliminated by being absorbed as a function of the state. Fine economic prospect this, for the doctor. Again, abuse of medical charity, as practiced in our hospitals and dispensaries, is a powerful factor operating to reduce the physician's income. Competition is becoming sharp; throughout the country thousands of graduates are being turned out by competing medical colleges, thus augmenting the number of those practicing medicine. The effect of this competition is cutting down the remuneration of medical men.

The spread of popularity of quackish medical fads is more prevalent than ever. The tendency to multiply them in the treatment of disease is rampant. Forty-eight new cults have arisen in America within the last ten years, many of which claim to practice the healing art in some form. Some of them have grown at tremendous speed and at the expense of regular medicine and the health of the people, as, for instance, pseudo Christian Science and allied cults and various "pathies," all rejoicing in more or less recognition from the laity. While many of them appeal chiefly to ignorant credulity, unfortunately the clientele which encourages such imposters is not exclusively composed of silly women and senile men. Whether one or all of these are responsible for the deplorable conditions matters not; every physician must look the situation squarely in the face.

This critical condition is not confined to Chicago or Illinois, but is a burning question everywhere. In the old world pauperization of the medical profession has become a veritable curse. In Austria, Germany and England it has become necessary for the doctors to organize medical protective leagues in sheer defense of their means of subsistence. In England conditions have become such that 7½ cents is paid per call, this fee including surgical dressings. In the House of Commons there has recently been introduced the national insurance bill, which provides for wholesale conversion of private into contract practice. The English profession is so aroused that the lay and medical press are being deluged with letters from angry physicians. So acute is the situation that a special meeting of the British Medical Association was recently called, lasting two days. The first day's session continued from 10 a. m. to midnight. The Association has 22,000 members, somewhat more than one-half of the profession; however, it represents the whole profession in its stand against that bill. For the purpose of fighting it physicians are daily joining the Association in large numbers. A mass meeting of over 1,500 doctors was held in London, the largest meeting ever held to consider a medico-political question. On the platform were the leaders of the profession, including the president of the Association, the president of the Royal College of Surgeons, the president of the Royal College of Physicians, and others. The system of contract practice was loudly denounced and the sentiment wildly cheered. The physicians agreed to present a solid front in their fight in defense of their rights. The bill has done one thing which seemed previously impossible, that is, to thoroughly unite the whole profession in England.

Not only in England is the trend strong toward communistic and contract medicine. In Bohemia a new social insurance act will become a law soon; it will at once diminish the doctor's scope, for it will turn his private patients into the domain of practice served by the clubs. Zurich, Switzerland, is determined to supply medical and lay attendance free of charge in all obstetric cases in that city. The socialistic wave that is breaking over the whole world as to things in general is also having a marked effect on the future medical status there. Here, as in Europe, we are bound to be brought within the scope of state service unless we wake up and unite against this encroachment upon individual initiative and incentive to progress.

In New York, Boston, Philadelphia, Baltimore and other cities in America similar conditions exist, and organizations similar to those established in Europe have been formed to fight the encroaching evils which are acting so detrimentally to the profession everywhere. A feeling exists among a large number of the profession, making itself manifest from time to time in letters and articles in the medical press, that medicine should be represented more numerously than it is in the legislatures. There seems to be an especial attitude of aggrievance over the much prated circumstance that lawyers constitute so large a proportion of the personnel of our legislative bodies. Dr. Reed was perhaps the first to start this war cry, and it is being reiterated and echoed in periodic outbursts. "We should have at least as many physicians as lawyers in Congress," says a recent correspondent in the *Lancet Clinic*.

In the Forty-Seventh General Assembly there were six physicians, while over 50 per cent. of its membership were lawyers. Is it any wonder that the quacks were able to emasculate the medical practice act and so curtail the power of the State Board of Health as to prevent prosecutions of unlicensed practitioners, quacks, etc.?

Up to last year our legislators considered the medical profession a political non-entity; they claim that its members take no interest in civic affairs and for that reason they heretofore eliminated the doctor as a factor that in any way contributed to a legislator's success or failure at the polls. In its report two years ago the Public Relations Committee of the Chicago Medical Society said: "The medical profession will never get what it is entitled to in the way of legislation until it wakes up and becomes a factor to be reckoned with politically. This can best be done by bringing the law-maker to a realization of the tremendous influence of organized medicine and the votes they will lose if they do not give the profession respectful consideration."

The doctor's advice on any public question is rarely sought for or listened to. He is looked on as being only a doctor. For this negative esteem in which he is held, he has only himself to blame. With rare exceptions a physician has no opinion on subjects outside of his own profession. He does not keep himself posted on current events. All industrial questions vitally concern the doctor. A deep study of some of the different phases of these would be well worth his while, both to benefit society and himself.

The time has certainly arrived when the profession must become more aggressive; take a keener interest in public affairs and encourage its

members to leadership among men. As an organization we should not only ask for what we want, but should be in a position to demand it if necessary.

Medicine, it has been shown, is undergoing a metamorphosis. I do not believe the doctor should be left to shift for himself, to survive if he can or perish if he must. Can anything be done toward protecting the individual member of the profession by curbing the great forces now operating to engulf him? I think there can. In medicine, as in other forms of business, unification for mutual protection must be brought about. In organization lies our only hope. What was done through our imperfect organization with Senate Bill No. 140 and House Bill No. 380 illustrates what we may accomplish when the 11,000 physicians in Illinois become organized and work in harmony to insure the safety of every medical certificate.

Let us, then, at the earliest possible moment arouse ourselves to a hearty and unselfish co-operation, and combine in an offensive and defensive alliance against the numerous forces that seek to lower the standards of education, licensure and practice, and let down the legislative bars against charlatanism and quackery. It is vain for a few to make a stand against encroachment of private patients and public bodies, if within our own profession are to be found those who are willing to accept what others with the true interest of the profession at heart indignantly reject. And it is against human nature to expect that men should present a bold front to the common foe if they are morally certain that they will be stabbed in the back by the fellow within their own ranks.

The old saying that "in union there is strength" has been true for all ages, and now that the struggle for existence is daily growing fiercer it has passed beyond the region of platitude. Doctor, the fight is on; it means a battle royal against intrenched power; it is bound to be a long, desperate conflict, and if the profession is to survive as a body of self-respecting, free men, progressive and decently remunerated, you must do your part. Will you do it?

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INFANTILE PARALYSIS*

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Infantile paralysis, or acute anterior poliomyelitis, has been epidemic in many parts of the United States lately, and its epidemicity has led to general interest on the part of the profession in the disease, and to study of its cause and symptomatology. It is infectious, although the causation germ has not been discovered. One of the remarkable things about the disease is its seasonal appearance, it seemingly always coming in summer and cold weather putting a stop to its prevalence. Some have thought that it only prevails during the hot, dry weather, but there have been at least small epidemics reported during wet weather.

* Read before the Mercer County Medical Society, May 9, 1911.

One of the most extensive epidemics reported was that of York County, Nebraska, during the summer of 1909. There were 200 cases and the death rate was 7.5 per cent. The paralyses were of all forms: facial, hemiplegic, of the upper extremities, of the lower extremities, of one leg, of one arm, or of one upper extremity and the opposite lower extremity. A later report of the Nebraska epidemic by Dr. McClanahan of Omaha says that his reports show that nearly, or all, of the deaths were due to bulbar paralysis, and by this was meant an involvement of the motor centers in the medulla leading to paralysis of respiration. He says that it was not surprising that mistakes were made in the diagnosis of the disease, as the text-books have little to guide the physician in his diagnosis and the literature of the disease was not at that time generally accessible to the profession. It was called summer grip, mysterious disease, spinal paralysis, cerebrospinal meningitis and poliomyelitis.

These were cases of cerebral type that could not be differentiated from true meningitis except by lumbar puncture. So far as then ascertained, the diplococcus intra-cellularis meningitidis was not found in any of the cases. Collins says that from a study of the disease clinically no information has been gained as to how the virus gains access to the system. From experiments on monkeys, however, Flexner is convinced that the portal is the same as in epidemic cerebrospinal meningitis, namely, the nasopharynx. The necessity of adopting measures to keep the mucous membrane in a state inimical to infection in children of a community in which the disease is prevailing is obvious. The period of incubation is from five to ten days. Dr. McClanahan's paper, which appeared in the *Journal A. M. A.*, closes with the following suggestions:

1. It is an infectious disease.

2. The evidence that it is contagious is accumulative.

3. The only safe procedure is to treat it as we would measles or scarlet fever, namely, isolate the patient.

4. We should realize that it is a general disease, that it may involve any part of the nervous system, that the bulbar type is usually fatal, and that our treatment should be directed toward prompt and efficient elimination.

Allow me to report the following case:

E. A., girl, aged 4 years; previous history good; was not well for a week or ten days before I was called; heavily coated tongue, constipation, headache, eyes injected; temperature, 102.6; pulse, 100; some difficulty of breathing. She acted as if her hands and arms were somewhat stiff, and one morning her parents reported that she had fallen out of bed after they had gotten up, and as a result of the fall her back was sore and stiff and legs useless. Wasn't this getting the cart before the horse, hadn't she fallen because they were paralyzed? Bladder was paralyzed and urine had to be drawn for several days. The temperature gradually fell, and the symptoms improved, but her back was sore and stiff and her hips useless. Her back improved, and now, twelve weeks after the initial attack, the patient can creep and sit upright, but her legs are paralyzed, the right leg absolutely useless and the left almost so. While she was convalescing, the only other child in the home, H., aged

8 years, was taken suddenly ill with severe headache, stiff neck, injected eyes, restlessness and sleeplessness, severe convulsions and a temperature of 103. In three days he was better and no paralysis noted. Was this an abortive attack of poliomyelitis?

Our treatment was palliative and eliminant. In both cases there was constipation; hence laxatives and high enemas were given. The patient left paralyzed was given iodid of potassium and later syrup of the iodid of iron; massage and the faradic current were also used.

FURTHER REPORT ON CASE OF ACUTE ANTERIOR POLIOMYELITIS

Since reporting on the case of E. A., at the semi-annual meeting of this society, held in New Windsor, we have taken her to Chicago, where she was seen and examined by Dr. Rothstein, a neurologist. He advised a system of regular bathing, the use of electricity, both faradic and galvanic, tonic treatment, using such tonics as strychnia, cod liver oil and hypophosphites, together with graduated exercises, massage, fresh air, sunshine, etc. We have been carrying out the treatment as outlined and are able to report improvement. The general health of the patient has improved greatly and she can now stand unaided.

The treatment of poliomyelitis would seem to be along the line of preventing deformities, and the restoration to every muscle whose nerve supply is not cut off, of as much power as possible, and to do this it is of the greatest importance to carry on a series of progressive exercises in the bed or chair or on the floor. One must use ingenuity to make these exercises attractive and encourage the child by rewards to increase the number of times of the movements each day. We have fixed up a walker for our patient, which seems to encourage her to stand. It is built on the principle of the baby walker—a supporting frame, inside which she stands, with casters under the frame, which makes it easily moved.

It has seemed to us that the regular and persistent massage given the affected parts has aided greatly in the restoration of power to them. Seemingly electricity is of value in these cases, and the more faithfully and regularly it is used the greater the improvement will be.

We are told that Sir Walter Scott was a victim of infantile paralysis, which attacked him at the age of 18 months. And it is interesting to note that the treatment prescribed by his grandfather, who was a distinguished anatomist and physician, was the same as that recommended to-day. He was sent to his grandfather's farm in Scotland, and when the day was fine he was carried out among the crags and rocks and laid down in the care of an old shepherd. He soon began to roll about and try to stand, finally to walk and climb and run, and in his own words he says: "I, who in a city had probably been condemned to hopeless and helpless decrepitude, was now a healthy and high-spirited and, my lameness apart, a sturdy child."

It is likely that this disease will again appear, sporadically and epidemically, and it may be in Mercer County. And so it behooves us to be prepared for the conflict and to know and remember that there are three distinct indications, the first of which is to preserve life and pre-

vent paralysis; the second, to relieve pain; and the third, to remove residual paralysis.

As to the first indication—preserving life and preventing paralysis—we have as yet no certain means of accomplishing these objects, but several drugs and procedures have seemed to help and an immunizing and curative serum is hoped for. Special indications requiring attention are the constipation and retention of urine, both of which were present and troublesome in this case, and seemingly better combated by copious enemata than by drugs. It was necessary for me to use the catheter for several days during the height of the attack.

The second indication is to minimize the pain and irritability of the attack and to secure rest and sleep. For this purpose, the warm bath or wet pack may be used to good advantage, and partial or complete immobilization of the affected parts by cushions, pads, pillows or by a jacket.. To remove the residual paralysis, the measures I have named seem to aid.

A REPORT OF A CASE OF BENCE-JONES ALBUMOSURIA *

CARL A. W. ZIMMERMAN, M.D.
EAST ST. LOUIS, ILL.

In 1841 Bence-Jones discovered in the urine of one of McIntyre's patients a peculiar protein body. It differed from the usual protein bodies found in the urine, in that the precipitate which occurred on warming disappeared on boiling and returned on cooling to redissolve on boiling, etc. The matter remained dormant until in the '80s, when Kuehne published his investigations of a peculiar urinary body. He found that it closely resembled the hemialbumose isolated from the products of digestion. Since that time, so far as I know, something like seventy-five cases have been reported. My report is somewhat incomplete, because I was not allowed to have all the urine I needed to secure a sufficient quantity of the proteid for more extensive examination; and because a post-mortem examination was not allowed. In consequence of this, no more space will be used in referring to other reports, except that at the end of my article I will call attention to a few papers which were intefesting reading to me. The following history of the case was taken May 27, 1910.

Family History: There is no history of new growths, tuberculosis, rheumatism or nephritis. Oldest son died of diabetes mellitus. Father was a small man, but two paternal uncles were tall and obese.

Past History: Had lobar pneumonia at 15, and once later. Rheumatism at 26; was not very ill. Twenty years ago had severe neuralgic pains in back of his neck and head which persisted for about one year, in the course of which time a large mass developed in the right posterior triangle of the neck. The mass exists to-day, is the size of a duck's egg, and has not grown in fifteen years. It is under but attached to the skin, and is freely movable, painless, and apparently a lipoma.

* Read before the East St. Louis Society of Physicians and Surgeons, Oct. 5, 1910.

Patient came to America when 24 years of age and promptly acquired malaria, from which he suffered acutely at intervals for five years. He contracted a right inguinal hernia soon after his arrival, which disappeared after wearing a truss for two years. In the early '70s he sustained an injury to his back while lifting a sack of coffee, and had a like injury shortly after. Serious results did not follow. In 1891, had an attack of vertigo after running; two repetitions followed on the same day, but never since. Denies venereal taint. Last fall injured his ankle in a jump from a wagon and was disabled for a week. Has had an eczema over each tibia for twenty years. Was a baker from 1855 to 1865. His various occupations since then have been: worker in a stone quarry, teamster, farmer, barkeeper and merchant. In his younger days, patient smoked excessively but never used liquor beyond moderation. He has always been a moderate diner, using the plain foods, and meats very sparingly.

Present History: Six weeks ago a pain appeared in patient's back, low down, which gradually grew more intense. At first it was noticeable, as a rule, only when he stooped or turned in bed; yet there were times when he suffered intensely in the night when not active. The pain was referred principally to the muscle mass lying on each side of the spinal column and between the last ribs and iliac crests. It was dull in character, with occasional sharp, shooting pains which made him cry out, and occurred oftener if he brought into play his lumbar muscles. Recently he has laid much stress on another pain which, he explains, has existed all the time, but which I did not locate until May 24. It is on the eleventh rib, almost its full extent, and is increased on pressure but no swelling can be made out. This is the pain which is apparently not increased on motion but the one which troubles him at night. Neither pain radiates.

I first saw patient on May 21, 1910. He had been under the care of another physician and had visited one of the neighboring hot springs without relief. My first diagnosis was lumbago, which agreed with the diagnoses of his previous attendants. When, however, after my second visit an examination of the urine gave me a reaction I had never before seen, I began to look for other trouble.

Treatment for a few days consisted in local antiphlogistic and immobilization methods, together with application of the interrupted current, without, however, any relief. As consultants, the late Dr. Baumgarten and Dr. Wilhelmj suggested the use of salicylate of soda until a positive diagnosis could be made. The very liberal use of this drug, together with various other analgesics, did not relieve materially the suffering of our patient.

Present Condition: Patient has a sallow complexion, but it has been so for five years to my knowledge. He weighs 237 pounds, this being 8 pounds less than he weighed three months ago. His eyes are slightly prominent, but there is no increased tension nor anything about them to arouse suspicion of Basedow's disease or tabes. The moisture of the skin is normal and there are no eruptions aside from the eczema previously mentioned, and no edema exists.

Patient prefers the recumbent position and appears perfectly comfortable when at rest, unless the sharp, shooting pains distress him. Efforts to alter his position are at all times accompanied by pain, which is severe, dull in character and most generally referred to the thickest portion of the lumbar muscles. On assuming a sitting posture, he immediately employs the support of his right arm to relieve the muscles of his back, by leaning to one side and resting his elbow on his thigh. He is unable to sit perfectly erect without pain, unless by holding his breath, the so fixed thoracic muscles support the lumbar group. Obviously then, he rarely sits erect.

When patient is in a comfortable position, his respirations are full, regular and easy, and there are no abnormal physical signs in the respiratory organs. The pulse rate is 72; the pulse is soft but not easily compressible. Some days the pulse misses a beat occasionally; on other days this fault cannot be detected. The heart sounds are clear, there being no abnormal accentuations or murmurs Occasionally there is a miss of a beat; the heart stumbles as it were. The number of red cells was 4,500,000; white cells, 7,000. There were 70 per cent. of polymorphonuclears, 28 per cent. of lymphocytes and 2 per cent. of eosinophils. The red cells stain well and quite fully, showing practically a negligible anemia. There are no enlarged glands.

The tongue is slightly coated. Abdominal walls are thick but not resisting. Liver and spleen not palpable. The appetite has not been impaired, and there are no dyspeptic symptoms. Bowels require the aid of cathartics much of the time.

There are no motor or sensory paralyses; knee and elbow reflexes normal; pupils react to light and accommodation normally.

But one bone gives symptoms, namely, the eleventh rib. It is always painful to the touch and is the site of the severe nocturnal pains. There is, however, no abnormality of contour.

The temperature has been taken frequently and at various times of the day but has never been febrile.

Patient urinates three or four times daily without discomfort and is not disturbed at night. Repeated microscopical examination of centrifugalized specimens of urine have given no evidence of organic disease of the urinary tract. The report of further examinations of the urine will follow.

May 31, pain on eleventh rib seems more localized; no swelling.

June 24, patient in the hands of Christian Scientists. He took a drive two days ago, but suffered severe pain at every jolt of the buggy. He weighed 222 pounds. Yesterday he was unable to leave his bed because of pain. His right eleventh rib is extremely painful on pressure but presents no irregularity of surface.

July 13, I was asked to make a social call, and found that patient was greatly discouraged. He suffered great pain and there was much evidence of a great general nervous depression. He had been driving twice since my last visit and as before suffered great pain in his back when the conveyance was jarred. The eleventh rib is perhaps not quite so tender as previously mentioned, but there is a very tender spot on the crest of the left ilium about 2 inches in front of the posterior supe-

rior spine; one on the left great trochanter, and another on the head of the left humerus. The different bone pains are identical in character.

Dr. C. F. Wilhelmj, who saw the patient in the last few days of his illness, tells me that the patient suffered excruciating pains in his bones, and especially radiating from the shoulders into both arms and several fingers. I would judge the latter pains to have been due to a neuritis from pressure, perhaps of a diseased vertebra.

On June 28, I was permitted to have a 24-hour specimen of urine, the findings in which, so far as I was able to examine, will here follow:

The specimen was collected between 7 a. m., June 27, and the same hour of the following day, and measured 1,100 c.c. A few thymol crystals were added as a preservative. The urine is of a dark amber color and turbid; reaction to litmus distinctly acid; specific gravity, 1,022. (The specific gravity of two previous specimens cooled to 15° C. was 1,025 and 1,028 respectively.) It is noticeable that on shaking the urine a persistent froth results.

1. To a specimen of filtered urine a quantity of sodium hydrate solution was added; as a very dilute copper sulphate solution was allowed to run down on it a beautiful blue-violet ring was seen at the contact.

2. On pouring some of the filtered urine on a solution of the 10 per cent. nitric acid solution a ring is formed at the contact. On shaking, the fluid becomes turbid, to clear on boiling, cloud on cooling and clear on boiling, etc. On the addition of stronger ammonia to the cooled specimen a yellow (salmon yellow) color appears. (Xanthoproteic reaction.)

3. A few c.c. of filtered urine were poured on concentrated HCl and a cloudiness was seen which dissolved on boiling and returned as a stringy precipitate on cooling.

4. When the filtered urine was poured on concentrated H_2SO_4, a lighter ring and cloud appeared than in Nos. 2 and 3, and it cleared on boiling and returned as a light precipitate when cooled.

5. Phosphoric acid, when added to the urine, caused no precipitate.

6. Tannic acid, when added to the filtered urine previously acidified with acetic acid, gave a dense precipitate which on heating gently was *entirely dissolved,* to recur on cooling and again disappear on heating to boiling.

7. With trichlor-acetic acid a precipitate occurred, which cleared on heating and recurred on cooling, etc.

8. Glyoxylic acid mixed with the urine and poured on concentrated sulphuric acid, gave a purple-violet ring.

9. On heating the filtered urine gently, the first cloudiness appeared at 65° C. (In all other cases that came to my notice 55° C. was the point of beginning turbidity.) In continuing the application of heat to 100° C. no clearing was noticed, but rather an increased cloudiness and a fine precipitate.

10. The addition to the urine of a saturated solution of magnesium sulphate in equal quantity, or saturating the urine with the salt, gave no precipitate.

11. An equal volume of saturated solution of sodium chlorid added to the filtered urine caused no visible change; the same result being obtained when the urine was saturated with the salt. If now acetic acid was added a dense cloud was formed. On boiling a heavy precipitate fell to the bottom, and there was no clearing of the solution above.

12. To a portion of urine filtered three times through double filter paper, two volumes of saturated ammonium sulphate solution were added, causing a heavy cloud. This was filtered, the filtrate was slightly cloudy but did not give the biuret reaction. The precipitate was practically wholly soluble in water and gave a pronounced biuret reaction. When the precipitate was exposed to dilute iodin solution, a yellow color occurred. In this test a positive reaction for secondary albumose was obtained.

13. When acetic acid and a few drops of potassium-ferrocyanid solution were added to the filtered urine, a cloudiness occurred which increased on standing and became further intensified on heating.

14. A solution containing citric acid and potassio-mercuric-iodid added to the filtered urine gave a milky solution. On heating, the body of the fluid cleared materially, but a fine precipitate fell to the bottom of the test tube.

15. Lugol's solution added to the urine caused no precipitate.

16. Millon's reagent gave a precipitate which turned rose-red on boiling.

17. Alcohol, when added in 2 volumes to 1 volume of urine, caused first a diffuse milkiness, then a fine precipitate which was soluble in potassium hydrate solution. In ammonia it was soluble to a less extent, the solution not becoming as clear as with potassium hydrate solution.

18. The amount of proteid in the urine as measured by the Esbach albuminometer was 6 pro mille.

19. When acetic acid was added to the urine the solution remained clear; on heating, however, a cloudiness and finally a precipitate was formed. The specimen was filtered, the precipitate giving a biuret reaction (serum albumin). The filtrate was treated with ammonium sulphate and a heavy precipitate obtained which was filtered off and found soluble in water; it also gave the biuret reaction. In some specimens of urine obtained on other days, the solution remained entirely clear when exposed to acetic acid and heat, showing that intermittently a serum albumin was present.

20. The reaction with lead acetate and saturated sodium chlorid solution as described by L. Napoleon Boston[1] was not positive; a dirty brown but not a black precipitate was formed.

In a further effort to prove the nature of the substance before me, I treated a portion of urine with acetic acid and thoroughly boiled it, getting a fine precipitate. This was poured through a double filter, leaving a perfectly clear solution, which shall henceforth be known as solution No. 1. (The precipitate secured on boiling with acetic acid was serum albumin.) Another portion of urine was saturated with ammonium sulphate and passed through a filter; the precipitate dried and dissolved in water, which solution shall be known as solution No. 2.

1. Am. Jour. Med. Sc., cxxiv, No. 4, p. 567.

Both solutions were then treated according to table and directions given on page 58, Vol. 4, of Allen's Commercial Organic Analysis, as follows:

	Solution No. 1	Solution No. 2
1. Dilution with water.....	No change	No change.
2. Saturation with magnesium sulphate.	No change	No change.
3. Saturation with ammonium sulphate.	Precipitate	Precipitate.
4. Reaction on boiling with slight acidulation with acetic acid.	No change	No change.
5. Cold concentrated nitric acid.	Precipitate soluble in excess, or, on heating, reappears on cooling.	Precipitate soluble in excess, or, on heating, reappears on cooling.
6. Picric acid	Precipitate soluble on boiling.	Precipitate soluble on boiling.
7. Potassium ferro-cyanide ..	Precipitate	Precipitate.
8. Potassio-mercuric iodid ...	Precipitate soluble on boiling.	Precipitate on addition of acetic acid, soluble on boiling.
9. Biuret reaction	Rose red	Rose red.
10. Cupric sulphate	No precipitate	No precipitate.

The results here tabulated point, with the exception of one instance, to the presence of a deutero-proteose. The potassio-ferrocyanid test was positive for hetero-proteose, and not for deutero-proteose.

CONCLUSIONS

While most of the tests of the first series merely tell us we are dealing with a protein body, we know from test 19 that there are two proteins present, one a serum albumin. That serum albumin is present in a very small amount may be judged from the very slight precipitate; also from reaction 2, inasmuch as the solution became perfectly clear on boiling. In reaction 14 the precipitate which fell was probably serum albumin, because by the same test, in series two, reaction No. 8, with urine freed from serum albumin, no precipitate insoluble by heat was noticed.

The presence of serum albumin also mars the result in reaction 9. We may, from reactions 2, 12, 13 and 19, exclude peptones; and from reactions 10, 11, 12, globins. Mucin may be dismissed without comment, having no positive reaction to support it.

From the results obtained in the second group of tests (Allen's), we see that all reactions but one are positive for deutero albumose, the one, No. 7, indicating hetero albumose.

Here, then, is an albumose in the urine with characteristics of its own; and taking into consideration the patient's clinical history, the diagnosis of multiple myelomatosis with Bence-Jones albumosuria is justifiable.

I wish here to express my thanks to Mr. Wm. D. McNally for calling my attention to Allen's work, and for other kind suggestions.

Interesting articles may be found as follows:

Am. Jour. of Med. Sciences: Vol. 125, No. 4, p. 658, by L. Napoleon, Boston; Vol. 123, No. 6, p. 976, by Chas. E. Simon; Vol. 126, No. 4, p. 644, by Parks Weber; also in Zeitschrift für Physiologische Chemie, 1900, by Magnus Levy.

501 Missouri Avenue.

ILLINOIS MEDICAL JOURNAL

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SEPTEMBER, 1911

THE SPRINGFIELD MEETING

The Council of the Illinois State Medical Society met at the New Leland Hotel, Springfield, Thursday, August 24, for its regular quarterly meeting. One of the main objects of the meeting was to confer with the local committee of arrangements concerning the next annual meeting of the Society. A number of points were settled; among these we mention the following: The headquarters will be established in the New Leland Hotel, a modern caravansary of 200 rooms with unusual equipment of lobby space, committee rooms and parlor, conducted on a liberal plan. Those members of the Society wishing choice accommodations for the meeting should communicate with the hotel, or members of the committee at their earliest convenience, in order to secure the choice of rooms. The sessions of the Scientific Sections, of the House of Delegates and the exhibition of drugs and instruments will probably be held in the new Y. M. C. A. building, located one block east of the hotel; this will also be the place of registration. The rooms are ample in size, well lighted and ventilated, and are unusually well adapted for the sessions of the society. It was suggested that the welcome address and preliminary opening be delivered on Tuesday afternoon, this to be followed by the meeting of the secretaries' conference. A 6 o'clock table d'hôte dinner will be served in the

gold room of the New Leland, which will accommodate at least 300 at one seating. It is hoped to have that number present the first day. Tuesday evening the first and important session of the House of Delegates will be held in Ferguson Hall of the Y. M. C. A. This hall is so arranged that the delegates can be accommodated on the lower floor, and the visitors excluded from this floor and accommodated in the gallery. It is suggested that the scientific program be commenced at 8 o'clock Wednesday morning, and continue through without interruption until 6 p. m.; this will be feasible because the two sections will meet together, thus providing two sets of officers. At 11:30 the hotel will begin to serve lunch at a price of 50 cents, and will be able to seat 400 at a time. In this way there will be no crowding at the tables, and the members can lunch at any time for three hours during the middle of the day. At 6 p. m. the society will probably adjourn to Washington Park, where an *al fresco* lunch will be served followed by vaudeville entertainment. The band concert will begin at 5:45, and continue through the lunch and evening and for the dance, as at the previous meeting held in Springfield. Thursday morning the session will again begin at 8 o'clock and continue until all scientific papers are read, the officers installed and *sine die* adjournment.

It has also been suggested that the profession be invited to come to Springfield on Saturday before the meeting; that the ministers of the various churches be requested to prepare special sermons to the medical profession on Sunday; and that clinics be held at the hospitals on Saturday, Monday and Tuesday morning. It is believed that there is an excellent opportunity to introduce some new features at this meeting, which will prove very attractive and profitable. It seems probable that from 1,200 to 1,500 members of the profession will attend. We will be glad to hear from members regarding the new features of the meeting. The committee of arrangements conferring with the Council are as follows: G. N. Kreider, L. C. Taylor, C. M. Bowcock, C. L. Patton and H. T. Morrison.

VARIETIES AND KINDS OF DOCTORS IN ILLINOIS

By the directories there is calculated to be something like ten thousand practitioners of medicine in the State of Illinois, about four thousand being located in Chicago. This gives an ample proportion for the population of the state which is 5,638,591, according to the census of 1910, being one practitioner to every 560 or 570 people. These figures, astounding as they are, are far from correct when we learn that a small army of persons just inside and outside the pale of the law must be figured as gaining a livelihood by treating the ailments of the people.

First and most numerous among these inside the law are the osteopaths, chiropractics, kiro-practics, mechano-therapaths, all of which maintain institutions said to be flourishing, and turning out large numbers of "practitioners," either by actual attendance or by mail, as has been devel-

oped by a communication recently written to THE JOURNAL. Probably a large percentage of these graduates are examined and licensed by the State Board of Health without much inquiry as to where and how they get a diploma.

There are not less than five hundred practitioners of osteopathy, chiropractics, etc., in Illinois, located in the larger centers, and treating a certain number of ailing people. Besides these there are other Chicago schools which are sending out graduates; for example, the McCormick Neurological College, the Oakley College of Naprapathy, the Northern Illinois College of Ophthalmology and Otology, and the Chicago school of Optometric Science and Mental Therapy. These institutions circulate expensive catalogues and are not doing business for fun. Other states refuse entrance to their graduates. As a natural result they must locate in this commonwealth.

Then comes the number, by no means small, of Christian science healers, New Thought practitioners, mentapaths and others of phantastic names, pretending to use no medicine, and ostensibly curing by suggestion. We should estimate these as not less than three hundred.

Another class, by no means small, are the cancer paste people, often found at obscure points, but doing quite a business on persons seemingly unwilling to accept modern methods of treatment. One hundred practitioners of this sort would probably be an underestimate of the actual number.

Another class, quite numerous and culling money from the unfortunate or credulous, is the traveling "specialist," who comes out of Chicago, locates in a country community, and sends out scouts to herald the praises of the "specialist" to chronic sufferers. One of these has recently come to our notice as thus scouting through Champaign County, and said to be doing quite a business of this sort. His name is Dr. Berry S. Henderson. According to our correspondent Henderson, whose Chicago address is 182 State Street, works by traveling through the country. "In some parts of the country he has used an advance agent, who travels from house to house and announces that the 'Doctor' would come the day after. It seems he names a high price for a cure, and then if he is not accepted names a much lower price. He does not advertise in the local papers as far as we know." This sort of a practitioner is quite a little lower in grade than the advertiser who announces his wonderful skill in the local papers, and travels from place to place making his rounds about once a month.

We have yet to mention the advertising practitioner in the larger cities, who is in a way permanently located, but often flies by night to be succeeded by another of his kind supplied from the central headquarters in Chicago. There must be at least one hundred of this sort. Many of these individuals pay a toll of twenty-five or more dollars per month to some one for protection while they pursue their nefarious business without let or hindrance.

Then there is the prescribing, truss-fitting druggist. There are probably one thousand of these in the state who let no opportunity pass of

taking the responsibility of assuming the physician's place, especially in venereal or bowel troubles, and fitting trusses, supporters, suspensories, etc.

When practitioners of all sorts and variety are recognized in the poor old State of Illinois, it will be found that six million people support from fourteen to fifteen thousand persons who make a more or less sufficient living treating their ailments.

THE PROFESSION AND THE ALCOHOL QUESTION

If we are to judge from the papers and reports presented at the meetings during the last sixty years, King Alcohol, alias Demon Rum, does not appear to have had much consideration from members of the Illinois State Medical Society. This may be explained historically. The great Washingtonian movement of 1840 had expended itself by 1850, the date of the formation of the Society. The Society had only gotten fairly under way when the War of the Rebellion broke, and whatever temperance sentiment may have existed thereupon received a great backset. War above everything leads to intemperance and excess.

No booze, no battle; no rum, no riot; no alcohol, no anarchy seems to be the history of the world. Many men came out of the army confirmed drunkards. The brewer has profited more from the pension money than any other business man.

It goes without contradiction that innocent women suffer more from intemperance than they deserve. In 1873 a movement was started by the ladies which has done more for temperance than any other influence since the beginning of time. The sons of these women are the anti-saloon workers of to-day. Beginning with prayer meetings before and in saloons the women soon got down to a business basis.

Belleville, Illinois, along with St. Louis and Milwaukee, may be considered as nearly exemplifying the German idea in America. Beer is greatly in evidence; its use has been probably excessive in Belleville.

The State Society met at Belleville in 1880, and curiously enough for the first time in its history, the temperance question was presented in a communication from the Women's Christian Temperance Union of that city. A committee was immediately appointed consisting of such distinguished men as Drs. F. B. Haller of Vandalia, Ephraim Ingals of Chicago, and A. T. Darrah, then of Tolono, later of Bloomington, President of the Society and Grand Master of the Masonic Fraternity, who immediately reported in substance that "alcohol was an invaluable therapeutic agent, whose place could not be supplied by any other substance"; that "it should be used only under competent medical advice, when demanded by circumstances of the case, yet no one can more fully realize the injury inflicted by the unadvised and intemperate use of alcoholic drinks than the physician." The committee "would therefore earnestly recommend the exercise of temperance in all things."

The society was evidently not quite satisfied with this report hastily written, and appointed a special committee to report at the next session

on the use and abuse of alcohol in health and disease. This committee was composed of Drs. W. L. Reed of Cerro Gordo, J. T. Curtis of Otterville, and E. Ingals of Chicago. At the next annual meeting held in Chicago it appears that Drs. Curtis and Ingals prepared papers on this subject. Dr. Ingals was the only one present prepared to read his, but the other was, however, printed in the Transactions. When the report of the committee was called for Dr. Ingals apologized for not having a report, and stated that he had hastily written a few pages on the subject, which he then proceeded to read. Without comment these were referred to the committee on publication. The conclusion of Dr. Ingals' paper is very much like that of the committee of the previous year, as follows: "The duty, then, of the medical profession is clear. We should be, as most of us are, unobtrusive, but at the same time, influential advisers of temperance, and in proper cases, of entire abstinence from the use of alcoholic stimulants, and especially should we inculcate this great lesson in the most influential of all methods, by our example. We know how weak man is, and how prone he is to be led into harm by his appetites, and we should warn him of his dangers, and throw around him barriers of protection."

These reports are historically interesting, and we will see from Dr. Johnson's paper how far the medical profession has traveled from the theories of thirty years ago.

Dr. Johnson presents a mass of facts the authenticity of which cannot be questioned, and the importance of which should be fully understood by the profession, and transmitted to the laity. He might have gone still farther and given the evidence of leading physiologists to the effect that alcohol is not a stimulant, but a depressant; not a food, but a poison; not a builder up, but a tearer down of all mental and physical processes. We commend his paper to our readers. Such a paper would not and could not have been written a few years ago. The people as well as the profession have traveled a long way, and will go farther.

DR. STEALY SUPPLIES DEFICIENCY

In our August issue we mentioned the filing of the Transactions of the Illinois State Medical Society and the volumes of the ILLINOIS MEDICAL JOURNAL in the Lincoln Library at Springfield. These were complete or promised, with the exception of the years 1877 and 1878, and we are pleased now to say, that through the generosity of Dr. J. H. Stealy of Freeport, we have obtained the missing transactions, together with files for twenty-four years prior to 1898, which goes a long ways to supply another complete file for use in the office of the editor. We are much gratified to have these volumes at hand, and in behalf of the Society express appreciation to Dr. Stealy for his generosity in this matter. To complete another file of the transactions we need all the volumes prior to 1868, about sixteen in number, and will be glad to hear from any of our readers of where such volumes might be found.

AMERICAN DRUGGISTS' SYNDICATE

This organization, which we have had occasion to mention several times before, has recently organized a propaganda to sell its stock to the medical profession of America. A man named H. Schlesinger, with headquarters in the St. Nicholas Hotel, Springfield, has been sending out attractive literature, making promises of vast profits for those persons subscribing for the stock of this company. We trust that our readers will use the utmost caution in investing in this stock, as from all reports, we believe, its objects are entirely contrary to the code of professional ethics, to say nothing of sound business ethics.

THE AMERICAN COLLEGE OF BACTERIOLOGY AND PATHOLOGY OF CHICAGO

Under the heading of New Incorporations will be found a new institution said to be educational, of which the incorporators are certain men by the names of O'Conner, Alderson and Forbes. It seems that neither of these parties are registered as physicians in this state. Harry O'Conner is a stenographer in Chicago, and Thomas C. Alderson is a dentist in that city. It would be interesting to know who the incorporators of this institution are, and what its incorporation means.

MONUMENT TO DR. DAWSON

A monument is in the process of building at the cemetery, Wauconda, Ill., to the memory of Dr. Dawson, who was for many years a practitioner in that community, and it seems a character of unusual interest. It seems that he had come as a stranger to Wauconda from the West, and had immediately entered on a large practice, never refusing to go to any one, rich or poor, when called on. After he had been in the community for fifteen years, a lady and her daughter appeared in the town, the mother resembling a photograph which the Doctor for years kept on his office table. There was some mystery about her coming and leaving which was never explained, but added a touch of romance to the career of the Doctor. The following quotations from a write-up in the Waukegan *Daily Sun* will complete the story:

"And after the fair woman and her fairer daughter, both so like the picture that made its appearance on the country doctor's desk, had disappeared, the Book of the Past closed again, its heavy lock was sprung, and none ever more got a glimpse into the Realm of What Was. Only Dr. Dawson, Wauconda, Ill., guardian angel to the sick, the poor, the miserable, drifted back into his old self, and, his nag hitched to a big ramshackle buggy, again rode afar, and wherever he went pain fled, mercy was enthroned, unselfishness smoothed the brow of care, self sacrifice lit a path that must have been dark many's the time.

"So the mystery remains. It wrapped its arms about the old country doctor when he died and went to the grave with him. Soon a granite

weight will imprison it with him. No one cares to solve the secret now. Every one knows it must have been a good and worthy thing that forced Dr. Dawson to begin his life anew. What are the odds, then?

"Grateful patients of Doc Dawson one time bought the worthy physician a new buggy, a $75 one, complete from stem to gudgeon and even with a new whip, and gave it to him. And Dad will tell the grandeur of the first appearance of the doctor in the new rig, and then of its sudden disappearance.

" 'You see, boys, it was this way,' he will say, peeling an apple or mugging the fragrant cider, 'old doc had a game leg — I forgot to tell you about that — and the new buggy didn't provide for that, so doc, he couldn't stretch out his game leg, straight in front of him, like he uster, in the old rig, when he had a soap-box nailed to the buggy box and the bottom of the buggy knocked out. So one day he just took the fine new rig, wuth $75, and just naturally give it away to some poor cuss that needed it worse. Then he trotted out the old buggy, the one with the soap box, and the first we knew, there was doc drivin' down the street in the old rattletrap, his game leg in the soap box, where he could stretch it out straight again.

" 'Good old fellow, doc. Never said no to any man. Always went where he was called and stayed until he did the work. Sort of a guardian angel. Good old doc — I wonder, now, if —' "

AMERICAN LIFE CONVENTION

The Medical Section of the American Life Convention is to hold its annual meeting at the Hotel Schenley at Pittsburgh on September 20, the day before the opening of the convention.

At this meeting some very excellent papers of great interest to medical directors and life insurance examiners will be read, and any medical directors, examiners, actuaries or officers of companies who are interested are cordially invited to attend and to participate in the discussion of the papers.

It is suggested that any that expect to attend make reservation of quarters at the Hotel Schenley at once. If it is found later they are unable to attend the reservations may be cancelled.

The following is the program for the meeting:

1. "The Transmission of Tuberculosis During Fetal Life." Dr. Harold A. Miller, Medical Director, Pittsburgh Life & Trust Company.
   Discussion opened by Dr. Victor C. Vaughan, Jr., Associate Medical Director, Michigan State Life Insurance Co.
2. "The Healed Tubercular Lesion from a Life Insurance Standpoint." Dr. Geo. W. Parker, Medical Director, The Peoria Life Insurance Company.
3. "Blood-Pressure." Dr. Henry Wireman Cook, Medical Director, Northwestern National Life Insurance Company.
4. "Nervous Diseases as Applied to Life Insurance." Dr. John S. Turner, Medical Director, Southland Life Insurance Co.
   Discussion opened by Dr. J. H. Florence, Medical Director, Great Southern Life Insurance Company, Houston, Texas.

F. L. B. JENNEY, M.D., Secretary Med. Section Am. Life Convention.

Correspondence

EGAN NOT UNDER CIVIL SERVICE LAW

August 5, 1911.

To the Editor:—A few days ago you requested our opinion on the following questions:

"Is James A. Egan secretary of the State Board of Health, within the classified Civil Service of the State of Illinois, under the act of the General Assembly, approved June 10, 1911, in force July 1, 1911, amending 'An Act to Regulate the Civil Service of the State of Illinois, approved May 11, 1905,' as amended, etc."

We have examined the statute of the State of Illnois on this question and are of the opinion that James A. Egan, as secretary of the State Board of Health, does not hold an office within the classified service provided for by the amendment of June 10, 1911.

The amendment of June 10, 1911, provides among other things as follows:

Sec. 3b. All persons who, when this act takes effect, shall hold offices or places of employment other than those exempted in Section 11 of this act, shall be classified under the provision of this act, and shall become members of the classified State Civil Service without original examination.

Sec. 11. All officers elected by the people; all officers, boards and commissioners appointed by the governor subject to confirmation by the Senate; ..... shall not be included in the classified service.

The question then arises whether James A. Egan, secretary of the Board of Health, is a member of a board appointed by the governor, subject to confirmation by the senate, within the meaning of Section 11, above quoted; or, in other words, whether the Statute of this state, creating and establishing a State Board of Health, contemplates that the secretary of the State Board of Health must be elected from among members of the Board of Health.

The State Board of Health was provided for by an act of the General Assembly of this state, entitled "An Act to Create and Establish a Board of Health in the State of Illinois, approved May 28, 1877, in force July 1, 1877," which provides among other things as follows:

Sec. 1. That the governor, with the advice and consent of the senate, shall appoint seven persons who shall constitute the Board of Health. The persons so appointed shall hold their offices for seven years. . . .

Sec. 10. The first meeting of the board shall be within fifteen days after their appointment, and thereafter in January and June of each year, and at such other times as the board shall deem expedient. They shall choose one of their number president.

Sec. 11. They shall elect a secretary, who shall perform the duties prescribed by the board, and by this Act; he shall receive a salary which shall be fixed by the board; he shall also receive his traveling and other

expenses incurred in the performance of his official duties. *The other members of the board shall receive no compensation for their services,* but their traveling and other expenses while employed on business of the board shall be paid.

Section 11 does not expressly provide that the secretary shall be elected from among the members appointed by the governor, as does Section 10 in relation to the election of the president, but we are of the opinion that the intention of the legislature was that the secretary of the board should be chosen from the members. This is a reasonable inference from the language of Section 11, where provision is made for the election of the secretary and his salary and then the language is used: "The other members of the board shall receive no compensation for their services."

We understand that the legal department of the state has declined to answer this question. Under Section 3 of the Act of June 10, 1911, the Civil Service Commissioners must within six months from July 1, 1911, classify all the offices and places of employment in the state service except as provided in Section 11 of this Act, and it will be necessary for these commissioners to determine whether or not the office in question comes within the classified service. At that time an opinion from the legal department of the state, we presume, will be furnished to these commissioners on this question, and the commissioners will be governed entirely by that opinion.

Yours truly, CONKLING & IRWIN.

DECADENCE OF SECTARIANISM

To the Editor:—In spite of property complications and other impediments the unification of the medical profession goes on without substantial setbacks. One of the oldest homeopathic colleges in the country announces that it hopes to build a new college based "on the broadest lines of modern scientific medicine," which program is above all fair criticism. But, with dwindling classes and an equipment admittedly inferior to several regular institutions nearby, there seems really no sound reason why the college should exist at all. For economic considerations it were better to unite forces with some of its neighbors. The small grain of homeopathy remaining in the institution might safely be transplanted to any strong regular school without serious danger to the future of progressive medicine. Many homeopaths insist that modern medicine is disguised homeopathy, which, if true, ought to produce feelings of pride rather than resentment against a condition which they have brought about. If homeopathy shall have served its proper reformatory ends, and shall have, in turn, been swallowed up by its own products, it has no cause for humiliation. Certainly science cares nothing for mere names, whereas sectarianism places a name before all things.

As suggested, it would appear that, from motives of pure economy, the homeopaths would turn their ship toward port and steer with the tide whenever possible. It is not only absurd but palpably unjust to ask the

taxpayers of Michigan and Iowa to support costly "Departments of Homeopathy" in their State Universities for the accommodation of a handful of students. Minnesota closed out her homeopathic department a year or more ago. The recent closing of the homeopathic college at Louisville leaves the Southern States without a single institution of the kind. There are rumors afloat that must cause the management of some other institutions serious misgivings.

I believe that nearly all intelligent homeopaths see the fatal drift away from sectarian medicine, and I suggest that, as a sure means of smoothing the way for complete professional unity, homeopathic bodies, as bodies, be invited to attend and take part in all regular medical gatherings. Such a policy would soon make apparent the wasteful folly of maintaining separate organizations to promote the ends of science. Of course, there are irreconcilables in both camps, but they constitute but a fraction of the active professional workers of to-day.

I hope that the officers of the American Medical Association may be induced to give this matter serious thought. There are hundreds of progressive physicians, homeopaths in name only, who would gladly drop a meaningless sectarian title and unite with the general medical profession, provided they are assured of the welcome which I know awaits them.

PHYSICIAN.

DR. METTLER'S PROTEST

July 19, 1911.

To the Editor:—I note the absence of any mention of my paper on Acute Poliomyelitis which was presented by me and discussed by Dr. Grinker, from the official minutes of the Aurora meeting as they appear on page 59 to 62 of the July issue of the ILLINOIS MEDICAL JOURNAL. I presume that this was an oversight.

And now while addressing you, may I not as a member of the State Medical Society, express the desire that as Editor of the JOURNAL, you will use your influential position to help suppress the petty squabbling and political mud slinging that seems to have become all too prominent in our profession of late? One wonders sometimes whether the study and practice of medicine, about which we are supposed to have some exalted ideas, enlarges or diminishes the mental caliber of some men. Cheap slanderous politics is a disgusting thing at all times for sane men to stoop to, but when it breaks out among the followers of a profession, whose past has been so full of honor and distinction, whose chief watchword is scientific truth, and whose aims have always been upward, one must conclude that there have crept into our profession some wretchedly mental, or temperamental misfits. In certain places and under certain conditions we expect childish bickerings and petty strife, as we expect nauseous odors from stagnant cess-pools; but when medical men, to whom the world looks for guidance in regard to that most precious possession this side of the grave, namely, health and happiness, begin scratching and biting one another like Kilkenny cats under the guise of

medical politics, it is high time for our profession to hang its head in shame, and to repudiate such ill-advised individuals. Surely the blot of commercialism will receive a still darker stain if this sort of thing which appeared of late in our high and beloved profession is to be attributed, as some say, to the sharp competition involved in the making of a livelihood today from the practice of medicine. If wild scramble for office, notoriety and a commercial rivalry is the natural outgrowth of organization; if the airing of petty jealousies and the quarrelsome conflicts in the pursuit of gain is to take precedence in the assembly, and in the printed page; if in a word the organization of our profession is to result in the putting into the second place the science, courtesy and charity for which our profession has long been distinguished, and in the setting up of an arena where we can vent our petty spites, play our cheap politics, and exhibit to the eyes of the world all the miserable little follies and meannesses of human nature, then ought we to rue the day that the word organization was ever uttered in connection with our profession. I think I voice the opinion of many of my confrères when I say that we are heartily sick and disgusted with what is sometimes euphoniously denominated nowadays medical politics. If as a profession we have a scientific reputation to maintain and a proper conception of fair play and courtesy, let us in the name of our glorious history, in the name of our honored dead, and in the name of our own self respect repudiate the fellow who for the sake of a pot of pottage forgets all this and breaks all the noble traditions of our calling in his political mad scramble to get more and still more. Let's not banish all idealism, even though we are in the midst of the most wearisomely commonplace materialistic age. I do hope you will, as editor of an influential journal, ignore if you cannot suppress the personalities and squabbles of the small fry in our profession, and devote your pen to the inditing of editorial that will in some measure replace our lost traditions, and pointing to far higher aims than we have lately been following. Like many others with whom I talk, I do hope you will pass by the useless and little bickerings, and will restore the dignity, learning and high idealism that we look for on the editorial page.

Believe me, Yours very respectfully,

L. HARRISON METTLER.

L. HARRISON METTLER, M.D.,
Chicago, Ill.

July 21, 1911.

Dear Dr. Mettler:—I have yours of the 19th inst., regarding the omission of any mention of your paper, and will be glad to at once take up this matter and find out where the error was made, for it was undoubtedly an error. I am very glad for your pertinent remarks on the condition of the medical profession, and request that you permit me to publish the same in the next issue of the JOURNAL. No one appreciates more than I the most disagreeable facts which you bring out, and yet it is quite impossible to ignore, in the editorial page, certain conditions existing in the Illinois State Medical Society, and in the Illinois State Board of

Health at this time. To show that as editor I have not been pushing certain matters to the front, I will say that it is more than ten years since I became convinced of rottenness in the office of the State Board of Health. For several years I stood alone in my belief in this matter, and so strong was the State Board of Health entrenched in the good graces of the profession that beyond casual remarks it did not seem wise to make any reference to the scandalous conditions. Gradually but surely my belief has become general throughout the state, but in the meantime other elements have come to the support of that organization and have combined with it to make our State Medical Society a battle ground for office and preferment instead of an exhibition ground of scientific talk and sanitation. I should only be glad to drop all reference to the last two meetings of the State Medical Society, were it not that it seems to me of vital importance to expose the insurgents who have been and are now trying to control the State Medical Society. If it were possible to have a reorganization of the State Board of Health about three-fourths of the difficulties would be abolished, for it is my belief that most of the trouble at the present time comes from the admission into the medical profession of Illinois by the State Board of Health of men poorly qualified and having no ideas of the ethics of the profession.

One thing more. At the meeting at Aurora it was understood that a desperate fight would be had between the certain elements of the profession and other elements, and those of us supposed to help the better element were told that dire consequences would result if the other element were permitted to predominate. In the face of this condition of affairs which seems to be criticized we were left alone to conduct this contest, and practically no member of the medical profession from Chicago came to the assistance and support of those presumably trying to do the right thing. Now, doctor, this does not seem to be right. If there is any considerable body of men that feels as you do in the city of Chicago they could not do a greater service to the Illinois State Medical Society than to appear at its meetings and make their influence felt among those delegates ignorant of the true state of medical politics or needing the cheering words of some one in whom they have confidence. It will not do for men to stand off and criticize the editor, the officers and delegates of the Illinois State Medical Society. There is a duty for every member of the State Society just as there is a duty for every voter in the State of Illinois to assist in cleaning up those who have brought disgrace on its people and medical profession.

THE EDITOR.

July 29, 1911.

To the Editor:—Your reply to my letter of protest is at hand and I thank you for the same. When writing that letter to you I had no thought of its publication in the JOURNAL, but if you think it will do a particle of good you may go ahead and publish it. Let me assure you, furthermore, that I intended no personal criticism and regret exceedingly if any such interpretation can be put on my words. I intended to appeal

to you to use your influential position, experience and acknowledged ability to stop the petty bickerings that have of late broken forth with unwonted virulence in our local profession, and to indicate that in my judgment one way to stop them would be to utterly ignore them and to keep the pages of the JOURNAL so crowded with high scientific matter that the small medical politician with his love of slander and personalities, and his utter want of scientific worth and profitable production, will not be able to find therein an arena for his miserable nauseating type of activity. Believe me,

Yours very truly, L. HARRISON METTLER.

July 31, 1911.

To the Editor:—I thank you for sending me copies of letters from Dr. Weis and Mr. Whitford. I do not wish to start a tempest in a teapot and so will let the matter drop where it is. Perhaps no individual is directly to blame for the omission of my paper and its discussion from the official reports; but certainly the system is wrong in any scientific (!) society whereby the stenographer is away carefully recording the political squabbling and personal bickerings of one set of men in that society while the scientific work for which the society was presumably established is allowed to go by the wall. This is merely another proof of the need of just such protests and appeal that I voiced in my recent long letter to you. Unless we are careful, the Illinois State Medical Society will fall to the level of a trades union, in which the chief topics of discussion will be "unionism," "wages," "strikes" and "sich like." Thanking you for your courtesy in this matter, believe me,

Yours sincerely,

L. HARRISON METTLER.

WHO GETS THE GRAFT?

August 1, 1911.

To the Editor:—What do you think of Cook County Hospital? This question may be most closely related to the previous discussion. Some time ago a former professor in one of the small medical schools in Chicago told me of certain transactions of his former students. He said that two out of three whom he named to me were decidedly lacking in education; the third might possibly have passed an examination for license. In some way the three got into communication with one J. D. R.; and my informant told me that through his influence enlisted by $200 apiece each got a license to practice in Illinois. Then, on payment of $200 more to the same man, one of the three got a license in another state. My informant claimed to be well acquainted with the three, and said that he had his information from them. He also told me of two other cases in which money was used to overcome objections of the State Board to license. In one, the payment was to an attorney, who was men-

tioned, or at least the attorney asked for the money. The other case occurred in Springfield. Unfortunately, when I asked for affidavits, my informant stated that affidavits could not be secured because it would jeopardize licenses.

AN ECHO OF THE PERCY REPORT FROM INDIA

AMERICAN CONSULATE GENERAL,
CALCUTTA, INDIA, July 6, 1911.

SUBJECT: REQUIREMENTS LEADING TO THE PRACTICE OF MEDICINE IN THE UNITED STATES

THE SECRETARY,
Illinois Medical Association,
State of Illinois,
Springfield, Ill., U. S. A.

Sir:—For the information of the Director General of the Indian Medical Service, Government of India, I have to request that you will forward in duplicate copies of the report of the recent Medical Conference which was held in Illinois, to determine the status of various medical schools located in the State of Illinois. I have further to request that you will send me any further printed information that will be useful to the Director General of the Indian Medical Service to determine the requirements of the Examining Board in the State of Illinois, which grants certificates to medical practitioners.

The Government of India is considering the passage of a Medical Registration Act, and desires full information regarding the relative value of medical qualifications, and the conditions of study, examination, etc., required by examining bodies abroad.

Your careful attention to this request will be very much appreciated both by the Director General and by this office. I am, sir,

Very respectfully yours,

CHARLES R. PERRY,
American Vice and Deputy Consul-General.

KAISERLICH DEUTSCHES KONSULAT

GERMAN CONSULATE, CHICAGO, ILL.
122 S. Michigan Blvd., August 7, 1911.

To the Editor:—I beg to ask you to kindly forward to this office a copy of the ILLINOIS MEDICAL JOURNAL of July, 1911, containing the report of the Committee of the Illinois State Medical Society, which was made recently at the meeting in Aurora.

Your costs will be promptly remitted. Best thanks, in advance, for your courtesy. Yours respectfully,

A. GEISSLER, Imperial German Consul,
By v. Reinitz, Vice Consul.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY

The regular monthly meeting of the Adams County Medical Society was held on July 10th, at the Hotel Quincy. The following members were present: Drs. Knox, Nickerson, Wells, Ball, Center, Austin, Rice, Pearce, Grimes, Ray Mercer, Knapp, Kirk Shawgo, Montgomery, Ericson and Irwin. After the reading of the minutes Dr. D. G. Stine, of Quincy, was unanimously elected to membership.

Special order of business brought up the discussion of the annual outing. A boat ride on the Mississippi had been planned, but the low water made such a trip impossible. It was finally moved and seconded to leave the matter in the hands of the entertainment committee. Every member present enjoyed the luncheon at our new hotel, and wished that more could have partaken of the excellent menu. Adjourned.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, May 24, 1911

In the absence of the president, the secretary called the meeting to order and appointed Dr. Daniel T. Nelson to take the chair. Dr. Adolph Gehrmann read a paper on "Toxins of the Pus Cocci." Dr. D. B. McEachern read a paper on "Some Applications of Physiological Psychology." Dr. Carl G. Swenson read a paper on "Tuberculin in Surgical Tuberculosis. Report on Cases with Cures."

DISCUSSION OF THE PAPER OF DR. GEHRMANN

Dr. Nelson: I was very glad indeed to have the doctor refer to the seton. Some of you younger men perhaps do not know what a seton is. It was a skein of silk the size of my pencil which was introduced with a seton needle furnished by the government, passed under the skin in the lumbar region, tied and left there. It was the duty of the junior surgeon to move the skein every day. It was a *sure cure* for some kinds of lumbago, especially among malingerers in the army. If it did not cure when it was put into one side it was threatened to be put in on the other side, but I have never heard of a case where it was necessary to introduce it on both sides.

DISCUSSION OF THE PAPER OF DR. SWENSON

Evarts A. Graham: Although I have had very little experience with the tuberculin myself, I have made some of the opsonic index determinations for Dr. Swenson. At the time I did this work for him I became impressed with the results he was getting, apparently from these injections. I believe he is right in saying that the tuberculin should be regarded only as an auxiliary to the general surgical treatment. It should by no means be considered an absolute specific and in no one's hands, so far as I know, has it been of value other than as an auxiliary agent.

He neglected to say that the tuberculin he uses is known in ordinary terminology as the tuberculin R, sometimes popularly known as "Koch's New Tuberculin," because it differs from the diagnostic tuberculin. It is practically a detoxic tuberculin. The old has been used, however, in recent years, since the introduction of the new, so that it is difficult to say which is preferable. I think perhaps it is a matter of choice and experience.

Dr. Swenson also stated that he has become convinced that it is wise to control by opsonic determinations, but the man who has probably had more

to do with tuberculin injections than any other one man—Trudeau—says that it is not necessary. Trudeau's technic of governing the injections is as follows: Starting with a small dose, as small, even, as 1/10,000, he watches carefully to see if there is any reaction—rise in temperature, pain around the site of the injection, etc. If there is not he increases, injection by injection, every week or ten days, watching most carefully all the while to keep the amount just below the amount which would cause reaction. He has not made opsonic determinations for years because he considers this method reliable. It is true, however, that Trudeau's cases are largely medical—pulmonary.

It might be interesting to recall that in cases of moderately advanced pulmonary tuberculosis Trudeau states that 18 per cent. more treated with tuberculin have recovered than recovered where they did not have it. This is a startling set of figures and includes a very large number of cases.

Dr. Nelson: These things go along so fast we can hardly keep up with them. It was only in 1881, at the International Medical Congress in London, that Koch's first demonstration of the tubercular bacilli was made to physicians from all parts of the world. Now just see what has been accomplished!

Dr. Oliver Tydings: I must compliment Dr. Swenson upon his report of such excellent results. I think the Society is to be congratulated upon the opportunity of seeing these results. I was very glad indeed to hear Dr. Graham say that so great a man as Trudeau, who has used tuberculin so extensively, did not deem it necessary to use the opsonic index as a guide, because if it was necessary it would limit the very general use of tuberculin.

I began its use before the day of the opsonic index and before the new tuberculin was put upon the market. Dr. Swenson attributes to Wright the use of the new vaccine, and yet it was practically, as Dr. Graham states, by the use of this Tuberculin R he obtained his results. I think Wright began his work in 1902 and the new tuberculin was put upon the market at least fifteen years ago and I have continued to use it ever since. I have used it in pulmonary and all forms of tuberculosis. My work now being confined to the eye, ear, nose and throat, I use it in these conditions, but I would say to any physician, no matter how limited your practice, if you are not using vaccine therapy in tuberculosis you are making a mistake. It is far easier used than many of the things you have to use, and I know whereof I speak, for I was in a general practice as long as it usually falls to the lot of man to practice. I have used tuberculin in all manner of cases, and I will tell you I have never seen any ill results follow the use of tuberculin. I have used it in cases where I would not use it now from the fact that I should not expect any good result from it or anything else.

We know that all lay stress upon not using tuberculin when a patient has fever. If I was going to pass away with tuberculosis within the next few months, and was conscious of it and was running a temperature, I would use tuberculin to control the fever if nothing else, and I say this advisedly from its use in many, many cases of the kind.

You begin with small doses and gradually increase as the doctor has described as Trudeau's method and you will have no trouble. I seldom use it more than twice a week, usually but once, and if I do not get reaction (I do not look for local reaction because when I give a hypodermic I give it in the connective tissue just under the skin, where you will not see a local reaction), if I do not get constitutional disturbance, I repeat it if there is urgent need after three days.

With children I begin with 1/10,000 milligram and usually I am giving 1/1,000 before two months have passed, depending, of course, upon the power of resistance. I have not tested it with the opsonic index and yet I have been as much pleased with tuberculin therapy as any therapeutic agent I have used.

Regular Meeting, May 31, 1911

The meeting was called to order by the President, Dr. Alexander Hugh Ferguson. Dr. Charles M. Robertson read a paper on "Operations for Laryngeal

Growths." Prof. H. J. H. Hoeve of Des Moines read a paper (by invitation) on "The Ante-mortem and Post-mortem Examinations of the Criminal, John Junkins."

DISCUSSION OF THE PAPER OF DR. ROBERTSON

Dr. J. Holinger: Permit me to make a few general remarks. First, Dr. Robertson in his paper puts the responsibility for early diagnosis and operation of growths in the larynx entirely upon the patient, saying that if he does not come to us early enough he is responsible for the ill results which follow. I think the tendency of the profession is more and more opposed to this view, inasmuch as there is no question but that some of these tumors, as well as tumors in other parts of the body, often do not show symptoms in their early stages. The patient often is not responsible and cannot be so held, for he does not know that anything abnormal is going on. Histories of cases are on record showing that when the first symptoms showed the tumor had already gone beyond an operable stage, or, to say the least, made an operation exceedingly dangerous. Of course there are exceptions. However, a tumor may develop in a part of the larynx not essential to speech or breathing, and there is apt to become quite extensive before the patient notices it. Take for example in Morgagni's fossa between the true and the false vocal cords, carcinoma can grow up and down to quite a considerable extent and not cause any symptoms.

Malignant papillomata below the vocal cords which are not very movable, can grow to considerable size. The patient finally comes to the doctor because of a continued hoarseness or some other seemingly small matter, such as his voice not responding to the impulse as it used to do, or the voice not being as clear and open as it used to be. When we look down, we see a lot of cauliflower growth below the vocal cords and almost from the beginning they are inoperable.

I would also differ from the doctor's statement as to recurring papilloma in children. There are any number of cases on record that have been carefully operated on where certainly the last trace and the last bit of papillomata were removed, yet there was recurrence over and over, not alone at the site of the old one, but in other places.

It is not necessarily the fault of the operator when these growths recur, but we have to admit in some patients a tendency of a large part of or the whole of the larynx to the formation of these growths. How we can effectually eradicate them we do not know, but the simple statement, "If papilloma in a child recurs it is the fault of the operator," should not pass unchallenged. Take, for instance, the possible consequences in court. There are so many lawyers ready and willing, in a given case, to start malpractice suits if such an absolute and positive statement is made before the Chicago Medical Society and stands without criticism or question.

Another point I wish to make concerns the malignant tumors, especially carcinoma of the larynx. They belong to the most benign of the carcinomata that we know of in the body. You know the carcinoma that has the least tendency to recurrence and metastasis is carcinoma of the skin, the next in line is the carcinóma of the esophagus, and the next carcinoma of the larynx. Results from its operative removal after several years are very good, and it is immaterial whether we have to take out half the larynx or a still larger part, recurrences are not the rule and metastases appear very late, if at all. The mortality from the operation is high for many reasons, but those who pull through have a good chance to live for many years without recurrence, without metastases. A few years ago in the German Medical Society of Chicago a number of patients were shown on whom partial or total laryngectomy had been performed from three to ten years previously. They were all in good general condition. The increased experience, better technic, rectal anesthesia, etc., will in time lower the mortality of the operation, because it is not the carcinomata that cause the high mortality of the operation, but complications like aspiration pulmonica, trouble with the vagus nerve, etc.

Dr. Oliver Tydings: The only criticism I have to make is exactly in the line of Dr. Holinger's. My experience and observations would lead me to believe that,

however successfully operated on, papilloma will at times recur, not only in the same place, but in other parts.

Again, the doctor speaks of the patient being absolutely in ignorance of certain conditions about the throat which may endanger life and yet he be not conscious of it. It is but a month ago that I had a case come in with carcinoma involving the larynx, in which the condition of the external glands first called the patient's attention to the fact that he was sick. His voice was good and he did not know that there was anything the matter until the external lymphatics became involved. Indeed he was taken with pneumonia after his last visit and died without knowing of it. I had had no opportunity to tell his family of his critical condition. I saw him on Thursday for the last time and he died before the following Monday.

These cases are not comparatively easy to handle, but they are far more easily handled now by the direct method than they were in the years gone by, yet the results of operation on laryngeal growths do not make it the most inviting field for work.

A. H. Ferguson: If you will pardon me for saying a word: It has just occurred to me that the treatment we apply to papilloma of the bladder might be extended to papilloma of the larynx. I have two interesting cases on hand now—one with papilloma of the bladder was operated on by a doctor (I forget his name) in this city four years ago. He remained free from much trouble for three years; then began to pass much urine. Five weeks ago I removed quite a large papilloma. I do not know just how much, but it was quite a bowl full. The bladder was almost entirely filled by the growth and the most malignant external parts had become adherent so that it was traversed in a very large portion by papilloma growth so extensively that I thought it was hopeless, but I took a large abdominal ring and put in to keep it open. Through this we applied the high frequency current. Through the proctoscope you can fairly see it shrivel. It seems to penetrate very deeply and destroy the cells. With this we have practically cleaned it up.

I have now a child with a syphilitic throat that I did a laryngectomy on two months ago with so much closure of the larynx that Dr. Abt passed a tracheal tube. In some way the string was lost, the tube went down and I had to do an operation and remove the tube. In addition to other antisyphilitic treatment I have been using high frequency. When we started if we removed the tube he immediately choked up. Put the current down the trachea and up the larynx and it seemed to dry up the tissue. Now we can leave the tube out for five minutes or so before he has any trouble, and I believe the high frequency has had a good deal to do with clearing it up.

I should also like to impress upon you the usefulness of this current upon papilloma growths in the bladder, and I cannot see how it could have anything but a good effect upon growths of the same character in the larynx.

This is aside from your subject and I apologize for bringing it in, but I thought it might have a thought in it for some of you who are doing this work.

Charles M. Robertson (closing the discussion): I will accept Dr. Holinger's qualification of my statement regarding papilloma. I did not mean to positively say that *every* recurrence was the doctor's fault, but I will reiterate what I did say, that where it comes back, it is *usually* an incomplete operation. There is a case on record in this town in which there was a papilloma of the bladder and a metastasis in the kidney, so papilloma is not always the simple thing we think it is.

I did not state that the patient who came to the doctor was ignorant, but I distinctly stated that many did not come through ignorance or superstition. I do not lay any particular stress upon their being to blame, although it is their misfortune that they do not know and come to the doctor when they should.

I do not think that carcinoma is as benign as Dr. Holinger thinks it is. It has been very malignant and virulent in my experience, and if the external glands are involved it is almost sure to carry the patient off. If it is just starting and affects the superficial structures it is no more than any other tumor; you

remove it and it does not go into the lymphatics, but these are the only ones that get well. The others have a mortality of pretty nearly 100 per cent.

High frequency: The only ones I know of are those used in Paris, and I do not know very much about those except that the voltage is very high, being sometimes two or three thousand, and is put in through the larynx with the idea of charring it. So far as I know no one in this country has used it.

Regular Meeting, June 7, 1911

The meeting was called to order by the President, Dr. Alexander Hugh Ferguson. Dr. Peter Bassoe read a paper on "Hypertrophy of the Entire Left Side of the Body, with Some Features of Infantilism and Acromegaly." Dr. Paul Gronnerud read a paper on "An Extremely Unusual Anomaly of the Kidney and Its Blood Supply." Dr. Daniel A. Webb of Scranton, Pa., (by invitation) read a paper on "Thorough Cleansing versus Stab Wound Drainage in Diffuse Peritonitis Following Appendicitis. Report of Cases."

DISCUSSION OF THE PAPER OF DR. BASSOE

D'Orsey Hecht: I wish to take this opportunity to say a few words in reference to this case simply because my own cases which I had intended to show to-night have not come and I shall therefore not read my paper. My cases resembled this somewhat, but they are dissimilar from the standpoint of pathology inasmuch as one of them was a case of mixed type of infantilism and acromegaly with underlying symptoms and the other was a complete eunuch. These cases are extremely interesting, particularly that phase of them which refers to the congenital factor.

In many of these cases of infantilism and acromegaly it is not a congenital condition, but an acquired condition, one caused by a perversion of one or many of the internal glands of secretion, and for this reason I wished particularly to present my cases and regret that they did not come. I would like to ask the doctor for a word as to the genitalia, potentiality or sexual instinct of this boy, if he has determined anything on that point.

These cases are particularly interesting because they are pointing out the trophic phenomena occurring that are presided over by the endocecal gland. This eunuch presented a very well developed penis, but has no testicles at all and presents a striking perpendicular growth. He has had no sexual instinct whatever and shows some of the anomalies present in this case, but quite different. He also presents phenomena of tremor, focusing of attention, not shown by this case.

This brings very forcibly to our attention the need for studying these cases that appear to be congenital or are acquired that present trophic disturbances and that are put down to internal secretions, under- or over-activity of the glands. I have never seen anything like this before and I think we are deeply indebted to Dr. Bassoe for presenting this to us, and the fact that these cases do exist in literature has been very well presented by him.

Dr. Moyer: The only case of this sort ever presented before this society, so far as I know, was presented by myself nearly twenty years ago. The hypertrophy did not involve the entire half of the body, as this does, but only one limb. As I recall it, the difference in the size of the limbs was about the same as in this boy and he was about the age of this one. This case was a congenital affair. His leg simply did not match the rest of his body. Otherwise he was normal, so there is a parallel in these cases except in the matter of the extent of the hypertrophy. That was the only case of its sort, so far as I know, exhibited in this part of the country.

Peter Bassoe (closing the discussion): Replying to Dr. Hecht, I will say that, as you will see from the photograph, the organs are somewhat small, still hardly pathologically so. As to sexual life, I do not know. I made no attempt to find out.

As to local enlargements of the extremities of one arm, one leg, one, two or more fingers of both hands, there is a very large literature, showing that it is not at all infrequent, and it is often the case that an arm or a leg will be as much as a foot longer than the other. For that kind of local disproportionate growth there are many etiologic factors. In some cases it may be due to amniotic adhesions or nevoid conditions, the latter analogous to the clubbing of the fingers seen in heart disease, causing chronic venous congestion. In cases of emphysema or other obstructive disease of the lungs we sometimes see the enlargements of the extremities similar to that of acromegaly. This is the so-called secondary hyperplastic ostitis or hypertrophic pulmonary osteo-arthropathy.

DISCUSSION OF THE PAPER OF DR. GRONNERUD

Dr. Emil Ries: From a developmental standpoint it is interesting to note that practically regularly there is a small artery which originates in the common iliac and runs up on the ureter. If the kidney does not reach its normal position, then that artery could easily supply the whole kidney if it developed at all. At the time this small artery was rediscovered recently surgeons were advised that it was dangerous to separate the ureter above the bifurcation of the iliac on account of this artery. Haller in the eighteenth century described it completely. The artery comes from the common iliac just above the bifurcation and corresponds to the artery which we see supplying the kidney apparently entirely in this specimen.

I should be interested to hear what the doctor can tell us about the adrenal, whether it is on top of the kidney and whether it is supplied by the same artery or whether it was in normal position and had its normal blood supply. If it is more or less independent of the kidney it should have its own blood supply. I should like to be informed as to the relations of the spermatic artery.

Dr. A. H. Ferguson: This is an added evidence of the surgical importance of the situation and blood supply to a kidney. There are a number of cases on record where the only kidney that was present was removed for disease, say for tuberculous disease.

I was guilty of performing such a feat a long time ago. This was before catheterization of the ureter was known. It was before tuberculous disease was as thoroughly known as it is to-day. It was before we used to pass the hand over to the opposite side and explore to see whether another kidney was present before the kidney under our fingers was removed.

This was a large tuberculous kidney. I remember it well and it was the only one she had. It positioned low and normal blood supply was a little high in her (it was from the abdominal aortá), and after the operation the woman lived for ten days. That is remarkable. She lived without secreting any urine whatever and even then she did not die from uremia, but from exhaustion, in a calm sort of way.

This also points out the importance of catheterization and having an *x*-ray picture taken with the stilets in place before a kidney is removed.

We are indebted to Dr. Paul Gronnerud for getting an additional blood supply to the kidney.

Dr. Paul Gronnerud (closing discussion): Regarding Dr. Ries' remarks regarding the suprarenal: they were there, right over the kidney. They were removed when I took the peritonum off. The course of the spermatic artery was not changed, but the suprarenal capsules were down over the kidney where we could see them.

CHICAGO MEDICAL SOCIETY—ENGLEWOOD BRANCH

Most of us are engaged in throwing stones over a wall and then throwing them back again. Come out and hear about The Man with a Hobby. Get one yourself and inject some new energy into your veins.

Do Dollars and Cents represent all that there is in life for you?

PROGRAM, WEDNESDAY, JUNE 7, 1911

DOCTORS' HOBBIES

1. Arts and Crafts .....Dr. Charles Haddon Parker
2. Out-Door Recreation .....Arthur G. Bosler
3. Canoe Cruising .....Guthrie Y. Barber and A. J. Kyle, expert canoeists
4. Northern Exploration and Travel—
   Stereopticon Lecture by Dr. Jno. A. Hornsby, late of the U. S. P. H. & M.-H. Service in Alaska.

"The sailor to the sea,
The hunter to the pines,
And sea and pines alike to joy the rover,

The wood smells to the nostrils
Of the lover of the trail,
And hearts to hearts the whole world over."

Every doctor is cordially invited to be present and enjoy this meeting with us. Come out and relax your tired and worried gray matter.

We are going to have some good stories of travel and adventure; some interesting specimens of handicraft to see and an illustrated lecture that will please you. This is to be the last meeting of the season and your officers and committees will try to see that you are cordially and pleasantly entertained. May we expect you?

THE DOCTOR'S RECREATION

ARTHUR G. BOSLER, M.D.

Our daily duties are as of prose,
Our amusements as of verse;
Pardon the allusion for
I promise to be terse.
The subject is the grandest,
And the best in all creation;
The talk to be, as you will see,
On the doctor's recreation.
Show me the man in this wild world,
With whatever calling blest,
Standing more in need, than the doctor indeed,
Of recreation and a rest.
Great are the responsibilities
In his problems of life and death;
The sorrows of the world are at him hurled,
He can scarcely get his breath.
Indeed, I sometimes estimate,
In the opinion of the laity,
The doctor dear should never hear
Or see the slightest gaity.
That he for work should be ever ready,
Thinking, as I've a notion,
They've uncovered and discovered
In him perpetual motion.
That any time that they've a mind,
A nickel in the slot,
A ring ding ding, will surely bring
This mortal on the spot.
He's sort of divine, never needing a rest,
They can call him by night and by day;

He should be ever ready, bright and heady,
Never saying a word about pay.
They think, I surmise, do you blame me?
By the way their bills they meet,
The doctor fine is so divine
He doesn't have to eat.
And if hunger e'er confronts him,
Then a pill or two he'll take,
And convert them by some magic pass
Into a sirloin steak.
As though we hadn't trouble enough
With their various aches and ills,
There is more in store, as hinted before,
When we come to collect our bills.
Enough could be said to turn your head,
Of our trials and tribulations,
The question is, getting down to biz,
How about our future vacations?
A vacation every man should have,
As well as an avocation;
Yet some there be, who cannot see
The need of recreation.
It has been said, by a wise old head,
All work and no taste of joy,
Is sure to make, without mistake,
Of Jack a stupid boy.
And if you think you are not like Jack,
Jot down in your minds this wrinkle,
Instead of being simply Jack,
You've been a jackass simple.
You might as well eat the same kind of meat,
Year in, year out through life,
As to treat your mind to the same old grind
Of work and worry and strife.
You'll get an infection, called brain dejection,
And you can't diagnose what ails you,
Everything goes wrong, life is no song,
And trouble galore assails you.
You are tired of life, with its grief and strife,
Your calling the worst in creation;
Don't feel so sad, it's not so bad,
All you need is a good vacation.
Now just the sort or kind of sport,
Is really a personal equation;
Select the kind, that to your mind
Seems best without persuasion.
We might divulge the kind indulged
By members of our own society,
Thus conclusions reach without a breach
Of ethical propriety.
There are two men just south of here,
Their names I have forgotten,
Who recreate by playing golf,
Even though they play it rotten.
They realize the good derived
Of a few hours spent on the links,
It serves to recreate their minds
And clear them of their kinks.

The sociability of the game,
The country auto run,
And then the test, of who drives best
Contributes to the fun.
Their aspirations oft run high,
On champion honors bent;
A little slow, they stand no show
With our expert president.
Our efficient obstetrician,
Who's most always on a job,
Of helping on this mortal sphere,
An Ann, a Jim or Bob.
For welcoming the little ones,
He surely takes the bunting;
And that it may seem like a vacation dream,
He calls it rabbit hunting.
Working hard by night, by day,
As John says with precision,
He's either on an O. B. job,
Or else a circumcision.
And when he could he always would
At recreation take a whirl,
By bringing Smith a bouncing boy,
And Jones a charming girl.
And up to several years ago,
He knew no other pleasure,
Working, working, never shirking,
Giving the fullest measure.
Invited to take, to Hamlin lake,
A trip in quest of fish;
"Its useless," says he, "for as you see
Its much against my wish."
O, hang your wish! Let's go for fish,
Its fine. I say in truth,
While growing old, pray let us hold
Our mirth and spirit of youth.
He went.
The air of purity, gave a feeling of security,
Relieved from cares, on pleasure only bent,
The water's tranquil beauty, it sure becomes a duty
To appreciate these blessings heaven sent.
To-day he is healthier, likewise wealthier,
And he looks a ten years younger,
By angling captivated, he now has cultivated
A most blessed fishing hunger.
Our conservative little surgeon,
Not mentioning any names,
But who enjoys, like most the boys,
The good old White Sox games.
A truly scientific man,
That's why this game he hugs,
In bacteriology priming up
Observing various bugs.
A string of bugs he first observed,
While waiting his ticket to buy,
Its very clear, I've discovered here
A string of the streptococci.
More knowledge to land, from the grand stand
On the neld he casts his eye,

Bugs arranged in bunches like those I see
Certainly are the staphylococci.
Of the lazy bugs and the crazy bugs,
See our baseball bug a'smiling,
The reason is plain, most always the same,
Some lady-bug likely beguiling.
I sincerely hope, the doctor with scope,
Who sees only bugs microscopic,
Will pardon the pun, and join in the fun
Of bugology in baseball topic.
The game is on, Detroit is strong,
Fleet Ty Cobb has his base,
It's very clear, this old reindeer
For second soon will race.
He takes a lead, paying little heed,
But hear the mighty shout,
The ball is whipped to first with speed,
The umpire yells "You're out."
Its nip and tuck, a little luck
Will turn the tide our way,
With three on base, Ping wins the race,
A home run saves the day.
A pastime fine is our baseball nine,
This game played on four bases,
But if you are wise, you will keep your eyes,
Away from the game of four aces.
Our genial pediatric man,
Who mostly treats the babies,
When not engaged with older folks,
Or smiling at the ladies.
Though busy as a bumble bee,
He's bound to have his fun,
With rod and reel and fishing line,
Likewise a double barrel gun.
He surely is a nimrod crafty,
Even though he's not so husky,
They say last summer he landed a hummer
In the form of a sixty-pound musky.
And now he's appointed and duly annointed
To pilot a bunch of the boys;
They leave in a week, this good lake to seek,
Good luck to their true fishing joys.
Our worthy little secretary,
Not to be at all outdone,
Has joined the ranks and now cuts pranks,
With a new but trusty gun.
Late last spring he thought it the thing,
To try both his gun and our luck,
To Clear lake to go, that we might know
The sport of hunting duck.
To test our aim, a bluebill came,
Looking large as a Canada goose,
He caused a flurry and in a hurry
Prematurely we cut loose.
A hundred yards out, we put him to rout,
He made for milder weather,
And as he fled we thought he said,
You never touched a feather.

Never mind a miss in a game like this,
But O! the thrill you feel,
As you spy off in the distance
A brace of greenwing teal.
On, on they come, and now they're here,
You're up. Forgotten is all trouble,
Bang! Bang! It was a lucky shot
To make that handsome double.
And next a lonely mallard drake,
A wise old bird is he,
Circling round and round, ere he'll come down
Even in range of number three.
You hold your breath, as still as death,
Should he see the slightest motion,
He'll say good bye while still on high,
And make as for the ocean.
His wings are set, get him? You bet;
Disappointment—your name is legion,
You intended to shoot, but a slip of the boot,
Net result,—moist gluteal region.
Such oft is the luck while hunting duck,
But excitement it never lacks;
Quit kidding me, look! don't you see
That bunch of canvasbacks?
There off to the right, see the gleam of white
As they turn to make the swing,
O! the ecstacy and expectancy
As you know they are coming in.
A goodly sight as they try to light,
That blind is sure alive,
With a sixteen and a twenty gauge
We cleaned up beauties five.
This royal sport we must cut short,
To-day we've sure been in it;
We better stop ere some game cop
Investigates our limit.
We are still glad that the fun we had,
Ours now in recollection,
And I know to me it will always be
Sweet in its retrospection.
When on some future O. B. case
You are having lots of trouble,
Your load will be lighter, your heart brighter,
Could you think of some greenwing double.
And now doctor dear, I trust it is clear,
As hinted in a general way,
Health compels us, duty tells us
To be happy we must have our play.
Many think, myself among them,
If you want a royal fun,
Get acquainted with sport untainted,
To be had with rod and gun.
A sport sublime, almost divine,
King of all our out-door fun,
Most recreating, health creating.
After all is said and done
Health is the greatest blessing,
Of man and of the nation,

It is often lost just for the cost
Of a few weeks sweet vacation.
This admonition ponder well,
It is you I am well wishing,
Get rod and line, lets have a time,
I say let's go a fishing.

CHICAGO MEDICAL SOCIETY—WEST SIDE BRANCH.

Regular Meeting, June 9, 1911

MEDICAL EDUCATION.

JOHN J. STOLL, M.D.,
CHICAGO, ILL.

There are two standards confronting every medical man, which are so far apart that few of us rarely get the two running smoothly into one channel. The one is the lofty humanitarian spirit which we should of necessity all maintain, and the other one, which is so difficult to harmonize with the first, is the sober, stern fact of commercialism. It is safe to say that we all start out with the laudable ambition of curing human ailments which are classed as diseases, only to find a greater remuneration in relieving humanity of what might better be classed as allied or concomitant conditions. The standard of commercialism is such a powerful lever that the moral or humanitarian standard is frequently overruled, and it is a safe proposition that few practitioners ever will or ever have lived their lives without some contamination.

We all know that conditions are not what they should be and that there is not to-day a single phase of human life which cannot be improved upon. Medicine, to say the least, has kept pace with the advance in any other line. The past twenty-five years have wonderful strides to record, and yet we are not satisfied. This struggle to advance, to replace all the old with the new, precludes any idea of establishing in medicine any one mode of teaching or any one ruling power, which might curtail our advance movements. The only danger in present-day methods is that medicine will ape religion and establish for itself an oligarchy which will be as false a bulwark as is their hierarchy. The church is perfectly willing that anybody should better this world, but you must do it on premises and lines laid down by them. "Here are our premises and conclusions, they are sacred and must not be disturbed; you may go ahead and reform all you wish, but do not disturb our little game." And that is exactly where medicine is drifting to, if left to our teachers.

The education of the public must come through the man who daily comes in actual contact with conditions as they are. With the increase in density of population there is a change, no matter how minute, of actual living conditions. There is a difference in the relation of man to his fellow man. To meet the requirements of these changes, the world needs different premises for ethical, civil and for moral laws. The real advance thought in these lines belongs to medical men, and it is our duty to show the world where and how all walks of life can be elevated to a higher standard and become better. The unorganized masses cannot compete with organized capital, and both of these classes must be brought closer to a more just and equable standard. From our ranks the leaders in this advance movement must come.

The freely expressed opinion is that everything mentionable is absolutely rotten. Everybody wishes everybody else reformed, and yet everybody wishes to maintain an untenable position. The real evil it is useless to tell to a conglomerate mass. The keynote to the entire affair is perfect organization. Medical men come in actual contact with all classes and as a consequence an actual reform movement which emanates from our ranks will be far reaching. Medical teachings of to-day have not produced nor can they produce a class of practitioners which are as high class and unique in their proficiency as we could wish. The same holds true of all trades, arts and avocations. Because of our dealing

directly with human life, a greater standard of proficiency is required of us than of any other class. When you consider our continuous opportunities, there is no set of men who have maintained higher standards of morality than we have. Considering the material which comes to us, medicine has done exceedingly well. When a man or woman is old enough to select medicine as a profession by choice, they are beyond the age when we should by right question their morals. We have heretofore had an undeniable right to look to an allied profession for a certain standard in that line.

The educational requirement for the study of medicine, if strictly adhered to, will probably pass inspection. The standard of morality and character requirements are simply a farce. The educational requirements are as elastic as are the necessities of the various institutions for the respective tuition and incidental fees. The moral requirements are of necessity very elastic because of the multitudinous standards of morality. What might be a wrong to one person could easily pass for a religious right to another. It is impossible to devise any legislative system to cure society of these evils. The groundwork must be done by evolving the premises for a better religion—one adapted to all climes and all classes. After these present masses get together as a student body there can be no attempt to shape them into anything like harmony. We cannot be expected to either think or do alike and we should therefore be taught more independence in thought and action without condemnation for either.

When a student enters most medical centers, his individual entity is lost in the body politic. His good moral character has been certified to and he must try to smash that record as speedily as possible! One man, who has had ample facilities for knowing, ventured this opinion: "Over 50 per cent. of medical students—and that includes dentists and pharmacists—contract gonorrhea. But there is a good reason for that. They come here strangers and take up with the 'birds' and cheap trash. They do not wash or take care of themselves as they would if they knew someone to put them on the right road. The good coaching spares the remainder." The moral wrong is a dead letter here, because of the prevalence of the opinion that several diseases are a necessary evil and can never be eradicated. My contention is that no teaching extant gives the proper directions to our sexual senses, and right here is where medical education can demonstrate its superiority.

Another proof of elasticity of qualification is illustrated by the following incident. A physician invited a new neighbor to one of the branch meetings. Strolling home after the meeting the following conversation took place:

"Well, doctor, how did you like the program?"

"It was good, but I could not quite get what that one man was talking about. The op—op—something; what was that?"

"You mean the opsonic index?"

"Yes, I guess that was it. I never heard of it before. What does it relate to?"

Here is the question: Is it possible that a recent graduate in medicine has received instruction in what any modern medical school purports to teach and yet that man never heard of the opsonic index? Can you harmonize that with the idea that a state board is absolutely adhering to a common standard with all classes of schools or with all "pathies"? The recent graduate is no better qualified, with all his equipment for the general practice of medicine, than his predecessors. He may have had more scientific lore crammed into him and perhaps has been better coached for internships, medals and state boards, but, on the whole, his proficiency is on a par with former classes. His therapeutics, if anything, are inferior. One reason for this may be due to the taint of commercialism, for it seems perfectly natural that a man with talent in this direction could garner far more gold devising formulas for our pharmaceutical houses than he could in wasting his time as a teacher. Another reason is that modern teachers recite to the student what is done in European clinics and hospitals. Few are talking from the experience of a lifelong practice on this side of the pond.

The unorganized, untutored general public is still afflicted with fraud worship in all walks of life. There are two difficult problems, viz.: to cure the public of its bad habits, and to cure ourselves from catering to their most menial points. One sadly neglected side of medical education is in not teaching students better business methods. Practically each individual is left to drift for himself. Our fee table is about as asinine a thing as could be concocted as far as business is concerned.

If we are ever to assume leadership over the unorganized masses, we must first perfect an organization of our own, which can be copied and followed by others. If all laws concerning public health should be formulated and freely discussed by medical societies, then they would accomplish something. There is too much similarity between the sentiments of the masses and of our own. A man who had done his senior obstetric work at a maternity remarked, "I pulled eighteen kids in fourteen days; now, that's going some." Surely that man's education has not elevated his opinion of motherhood much above the common herd. It is astonishing that not one of the recent critics of medical schools has ever touched upon the obstetric field. Right here lies proof that the glimmer of gold in modern medicine has blinded both teacher and pupil. In some quarters there is a movement on foot to give instruction in obstetrics to midwives and relegate all obstetric work to them.

It is not that commercialism outstrips philanthropy, but there is a lack of educating the student to the possibilities in this line. Woman not only stands the brunt of creation, but perverted religious teachings have misplaced her entire life. It is part of our work to place maternity in its true light. If we are willing to relegate obstetrics to the midwife, then we should be supplemented by a better-minded class of men. In no other work does a practitioner come so closely in contact with the exigencies of real life and with the real traits of humanity as in obstetrics. The masses as well as the medical fraternity are taking a step backwards when they allow this noble work to drift into the hands of midwives. The world must come to learn that the foundation for a better race lies in a carefully guarded and guided childhood. We all seem to be blind to the fact that in our delirious race for gold we are not giving due attention to children.

Another phase of medical education is the evolution of specialist and teacher. No one should be allowed to practice an absolute specialty unless he has followed a general practice for, say, twenty years. The present development of specialist or teacher looks a great deal like selecting as umpire a man who has never played baseball. That we are a poor guide to the public is shown in two things. One is that we are not looked up to for information which should naturally come from us, and the other is the manner in which we allow 606, *et sui generis*, to be advertised through us. If Hot Springs were on the other side of the pond, there would be more Americans attracted hither than were at the coronation. Not until some foreigner tells us the true value of what we have here will it receive its merited attention.

Because of the tireless activities of "the other fellow," no man's medical education can ever be complete. The man who remains isolated does not realize what he actually loses. The membership in all medical societies from branch to A. M. A. represents the best element on earth. If a man is looking for any special or detailed information he would surely be more apt to find it in some section than from any of us general practitioners. The weak point in our present organization is the absolute security of the man who practically isolates himself and of the security of the quack. You have no hold on either and no adequate means of controlling either. Our responsibility and our standing should be regulated by our local branch and not by a state law, which covers all of us with a blanket-like license.

Nobody should receive any license at all. After a man passes through all preliminaries he should register at the branch where he intends to practice. There he should have the benefit of the advice of any or all members on any dubious case. The general society should adopt a standard case book, which

should be subject to inspection. From these all vital statistics should be compiled. We might then ascertain whether those individuals who escape the usual children's diseases are more or less liable to diseases of maturity.

There is to-day no systematic effort to follow any coherent line of investigation. A few men are making a hard, lonesome fight in the right direction. Were we organized as we should be, medical affairs would be under the auspices of medical men. A transfer card would entitle a man to transfer anywhere. After five years of work a man might be issued a certificate covering his standing. It would be rather hard for him to be either drone or quack. The day will come when intelligent men will ask, "What is your standing in your class?" It is my opinion that as a class we who are regarded as general practitioners are more likely to go out of existence than are the men who are forging ahead and are learning a great deal every day by coming in continuous contact with one another. That is where you learn, by social intercourse and not by isolation.

I believe that many valuable data are lost because men neglect to come here and express themselves. We may not be able to institute any startling changes, but the younger men may follow up and work out perhaps a few ideas which you have cherished for a lifetime. Come here and present them. This world is not carried ahead by us old men. It is the young man with his youthful vigor and thirst for advancement who is making the real progress in medical as well as in all other education; not the isolated man. In my lifetime I have a recollection of the first team of horses owned in my home county. I have ridden in that same county in an automobile. In the fall of the year ox teams would come in for miles around to be shod for winter. That same transition from ox team to horseless carriage has been duplicated in many walks of life. Will we, as medical men, be leaders or be ruthlessly swept aside by a wave of progress which is going to wipe out some other profession?

CHICAGO OPHTHALMOLOGICAL SOCIETY

Meeting of April 17, 1911

DR. H. W. WOODRUFF, presiding.

A CASE OF SYMPATHETIC OPHTHALMITIS FIRST APPEARING FOUR DAYS AFTER REMOVAL OF THE EXCITING EYE, WITH HISTOLOGIC REPORT

Dr. Carroll B. Welton of Peoria reported the case of a carpenter, aged 35 years, who was struck in the left eye by a large nail which penetrated the globe. The iris was prolapsed into the wound, anterior chamber was full of blood, and vitreous was seen at the wound entrance, but only a small quantity had escaped. Vision: finger counting at two feet. Fellow eye normal. Patient refused enucleation. Iris fragments were snipped off. At the end of ten days, wound had closed. Projection at this time was faulty. Vision in fellow eye 20/20 with normal range of accommodation. Advice to have the injured eye removed on account of possibility of sympathetic involvement was finally heeded and the eye removed on the thirtieth day. Fellow eye was normal as to vision and accommodative power.

Four days after enucleation, sympathetic disease manifested itself by slight pain, reduction of vision to 20/40, photophobia and recession of accommodative power at near work. Iris dilated only partially under atropin, media fairly clear. In the chorioid, many nodes of a whitish yellow color were present. Patient immediately put to bed and given sodium salicylate. The next morning, precipitates were present on Descemet's membrane. A mesh of new blood-vessels were present over the surface of the iris. Patient improved under treatment and in ten days salicylates were stopped and he was discharged from hospital three weeks later.

Three months after the time of the injury, vision was 20/20. Histologic examination of the injured eye shows a marked proliferative uveitis of the type described by Fuchs.

Abstracts from the literature of twenty-seven cases of this post-operative type of sympathetic disease were given. Time of onset, in this form of the disease, is within a month following enucleation. Fifty-nine per cent. recovered with normal vision.

From a study of these cases, Dr. Welton concludes that the infectious agent is carried to the fellow eye by the general circulation.

Dr. H. W. Woodruff thought that it might be possible to discover the symptoms of early transference in the sympathizing eye by careful examinations made from day to day so as to be on the alert for the first manifestations of sympathetic trouble developing.

Dr. L. N. Grosvenor suggested that in all such cases it is advisable to keep a record in the nature of a drawing of the fundus. This would offer a very practical and conclusive basis of comparison from time to time in observing such a case.

A CASE PRESENTING SYMPTOMS OF TRACHOMA, VERNAL CATARRH, AND FOLLICULAR CONJUNCTIVITIS

Dr. Clifford E. Smith presented E. S., female, aged 14 years, from the service of Dr. Willis O. Nance at the Eye and Ear Infirmary, who came from Southern Illinois, accompanied by a little sister who gives same history and shows the same findings.

Patient dates her trouble to measles three years ago, but active trouble seems to have developed two months ago. Eyes have smarted more or less, but the lids have never been inflamed or stuck together in the morning. Vision in each eye is 20/20, and neither corneæ show any pannus. The conjunctivæ of all four lids and fornices are thickly studded with flat-topped sessile follicles varying from 1 to 2 mm. in diameter. The conjunctiva between the follicles is not infiltrated, the entire area presenting a pinkish-white appearance, rather than one of inflammation. The ocular conjunctiva presents the normal white appearance. There is no drooping of either upper lid.

Summary: 1. In trachoma of this duration, we would expect some pannus, and inasmuch as trachoma is a contagious inflammatory disease, we would expect to find in any case more signs of inflammation with more or less discharge, which is not present here.

2. In vernal catarrh we would expect to find a more milky-white appearance of the conjunctiva. In this case there is a suggestion of the "cobble-stone appearance" described by Fuchs, and we have the history that the present attack came on in the early spring. No eosinophils were found in this case.

3. In follicular conjunctivitis, we often get such an appearance with very few signs of inflammation. As a rule, however, the upper lid conjunctiva is not so extensively involved, and in most cases the duration is shorter.

Dr. T. A. Woodruff was of the opinion that the case was one of trachoma and if it had occurred in private practice would have treated it as such.

Dr. H. W. Woodruff called attention to the facial expression of the patient as being "typically trachomatous," an expression almost always exhibited by a patient who has had trachoma. In all cases of this character laboratory findings are usually negative, therefore it is necessary to take into consideration the clinical manifestations and of these clinical manifestations the ptosis is the distinguishing and almost constant symptom.

Dr. Thomas Faith suggested expression and the subsequent behavior of the lids as a means of differential diagnosis between trachoma and vernal catarrh.

Dr. W. A. Barr said that this patient has a younger sister in Dr. Beard's service at the Illinois Eye and Ear Infirmary, suffering from apparently the same disease. It is evident that more than one member of the family is afflicted with the malady. The indication from the history sheet as well as the clinical picture, is trachoma. The younger sister has been much improved by expression of the granules.

SYMPOSIUM ON DISEASES OF THE NASAL ACCESSORY SINUSES AND THEIR RELATIONSHIP TO DISEASES OF THE EYE

THE RATIONALE BASED ON SURGICAL PATHOLOGY

Dr. Joseph C. Beck presented this feature of the subject. He said that the pathologic anatomy of the nasal accessory sinuses explains most of the symptoms referred to the eyes and the further study of the surgical pathology can in most instances verify the cause of these symptoms. The positive results from surgical treatment of these accessory cavities is still another proof of the rational relationship that exists between the nose and the eyes.

He referred to the acute fulminant type of sinusitis in which either perforation or thrombosis has taken place with secondary infection of the orbital contents. This condition is most frequently secondary to an acute rhinitis and simple sinusitis, frequently in cases of pre-existing chronic sinus diseases. In cases which have developed in a preexisting chronic sinusitis, one will find chronic granuloma and polypi, or even old necrotic areas.

The bacteriologic examinations of the secretion show many varieties of microorganisms; the staphylococcus, micrococcus catarrhalis, streptococcus, pneumococcus, and bacillus influenza are found. Besides, many of non-pathogenic variety are present.

In chronic forms of sinusitis we find a larger number of ocular symptoms and diseases caused by the said affection, without the patient recognizing that there is anything very much the matter with his nose. In chronic suppurative sinusitis the middle turbinate body is in a true state of hypertrophy. The ethmoidal cells break down easily under the pressure of a curet. The pus is of a thick consistency and may or may not have odor, depending on the extent of retention and bony necrosis; also whether we have the specific microorganism present of fetid ozena.

In chronic non-suppurative sinusitis the middle turbinal is somewhat enlarged, especially anteriorly, and this has often the appearance of a polypus. The bone may be large because of rarefaction, and can easily be cut off or mashed. There are areas of polypoid degeneration on its under or outer surface. When polypi are present, and they are usually present, hidden early, and very manifest later, they are soft and more grayish in appearance. The ethmoidal cells are usually distended with polypi and many partitions are destroyed by pressure. Since the other sinuses, frontal, antrum and sphenoid are seldom opened in this condition, the pathology is not well known, except from post-mortem examination, and then the changes are found practically the same, except not so marked as in the ethmoid. This affection may be called chronic non-suppurative ethmoiditis rather than sinusitis.

These changes will very well explain symptoms of referred irritation in sensory and motor nerves, which cause ocular symptoms. The same is true in the suppurative form, but the pressure is not as great as a rule. Besides, the chronic suppurative process can extend to the orbital structures also by continuity of tissue causing inflammation of the nerves, muscles, etc. Both suppurative and non-suppurative forms will obstruct the circulation and explain symptoms caused by these vascular changes.

ANATOMIC AND PHYSIOLOGIC RELATION BETWEEN THE EYE AND THE NOSE

Dr. A. H. Andrews discussed the anatomic and physiologic relation between the eye and the nose under four heads. 1. The relation of the orbit to the bony walls of the nose and its accessory cavities. 2. The relation of the optic nerve to the accessory cavities. 3. The relation of the circulation of blood in the orbit and the blood vessels in the nose and accessory cavities. 4. The relation between the nerve supply of the two parts.

The orbit is one-half to three-fourths surrounded by the bony cavities connected with the nose. It is not strange that diseases of these cavities should seriously affect the ocular structures.

The thickness of the bony wall between the orbit and the nasal cavities varies to a considerable extent. There are sometimes dehiscences. The wall may be very thin or the bony plate may be thick and strong. In very thick skulls there seems to be a corresponding thickness of the naso-orbital walls, although exceptions are sometimes seen.

The bony plate lying between the sphenoid cavity and the optic foramen varies in thickness from 0.5 mm. to 2 mm.

The optic nerve lying as it does in close proximity to these cavities is especially liable to become involved. This is in part accounted for by the fact that the so-called optic nerve is not really a nerve at all, but a central intercerebral cord (Spalteholz), having coverings the same as the brain and spinal cord. The highly specialized function of third tract makes it more susceptible to disturbing influences around it. The absence of sensation makes disease of this tract insidious.

DIAGNOSIS OF ASSOCIATED DISEASES OF THE EYE AND NASAL ACCESSORY SINUSES

Dr. Frank Brawley declared that the close relation of nasal to ocular disease becomes more apparent as we learn to look for the important diagnostic points.

Asthenopic symptoms due to sinus disease are usually reflex in nature, but may also be due to a toxic process or to stasis in the orbital circulation resulting from the circulatory disturbances within the diseased sinuses.

All varieties of visual field anomalies have been ascribed to sinus disease, but the most valuable findings are central and paracentral scotomata and enlargement of the blind spot.

The eyelids may show edema as a result of frontal or anterior ethmoidal infection and this tends to lessen as drainage is established, being less at night than in the morning.

Van der Hoeve has found enlargement of the blind spot, which he calls peripapillary scotoma, to be one of the earliest symptoms of the disease of the posterior accessory sinuses.

If at the first appearance of the lid edema, the sinuses are investigated and proper drainage established, it would rarely be necessary to do the radical operations about the orbit and the safety of the globe would be assured.

As improvements in diagnostic methods, such as the *x*-ray and the vacuum apparatus, make early diagnosis of sinus disease possible, we are more frequently detecting its influence upon the ocular structures. We are also finding that the ethmoidal and sphenoidal cells are much more frequently diseased than we formerly believed and that they act much more frequently as the source of the ocular disease than the frontal or maxillary sinuses, which doubtless owe their past prominence in this respect to their greater accessibility.

DISCUSSION ON THE PAPERS OF THE SYMPOSIUM

Dr. Faith recalled a case of non-suppurative sinus disease in a patient, which later became of a suppurative type. The case presented many difficulties in diagnosis. A one-sided orbital cellulitis developed, the globe became infected and eye was later removed. A later examination showed polyp in the nose and frontal sinus. Another case in his experience was diagnosed as a cyst of the lachrymal sac which was later found to be a purulent process communicating with the ethmoidal bulla.

Dr. Lewis asked for information regarding a case of an amblyopic eye. Examination showed diseased tonsils, adenoids and a mucopurulent discharge from the nose. In four or five years, the vision was reduced from 30/40 to 30/100. No fundus lesion or demonstrable ocular involvement. The Doctor desired an opinion as to the possible cause of the reduction of vision.

Dr. H. W. Woodruff reported the case of a patient who consulted a rhinologist who advised operation on the nose for the relief of eye trouble which was an optic neuritis. Later the oculist found astigmatism and this being attended to, the

eye condition cleared up. He found the more difficulty in the recognition and treatment of the non-suppurative conditions than in those of the suppurative variety.

Dr. A. H. Andrews (in closing) said that when a patient has headache, etc., and the fitting of glasses relieves the trouble, the thanks are unreservedly given to the oculist for the relief of the condition, and vice versa, if a rhinologist is consulted for the headache and relief is obtained the rhinologist receives the thanks of the patient. He emphasized the advantages of the pressure test and the use of cocain in the diagnosis of many of the annoying conditions of the nose which might be productive of ocular mischief.

Dr. Jos. Beck, in closing, agreed with Dr. Woodruff that the non-suppurative conditions were the most difficult to diagnose. He emphasized the importance of always examining tissues themselves and usually some changes will be observed. The *x*-ray is of no value in the diagnosis of sphenoidal conditions; the sphenoidal sinus, however, in his experience, has been the most frequent source of trouble.

Dr. Frank Brawley (in closing) called attention to the fact that this class of cases is best treated by those who take into consideration the co-relation of the nose, throat and eye. The study of the fields of vision is essential and of much value in establishing a diagnosis. WILLIS O. NANCE, Secretary.

Meeting of May 15, 1911

The President, DR. H. W. WOODRUFF, presiding.

THE SURGICAL REMOVAL OF CORNEAL SCARS

Dr. Meyer Wiener, of St. Louis (by invitation) delivered an address on this subject illustrated with lantern slides. He said that a means for the successful removal of corneal opacities has stubbornly resisted the most persistent efforts of scientific ophthalmology. This, in spite of its tremendous significance from a visual, cosmetic, as well as an economic standpoint.

There is no mention in the text books of the surgical removal of scars. A method has been employed by the author which has been successfully tried on various animals and man, which promises much for the future. This consists of making an incision perpendicular to the surface of the cornea along the line of the scar; then cutting from the middle of this line through the scar to be removed. The cornea is then picked up carefully with a sharp hook and dissected away until it can be more firmly grasped with a forceps, it being urged to keep in the same sheath in which we start. It is difficult to gauge the first incision so as to go deep enough and yet not puncture the Descemet's membrane. But this skill is acquired with practice.

The after-care is just as one would treat any corneal wound; the less interference the better. Cleanliness is of paramount importance.

The microscopical specimens showed that the epithelium covers the resected area in from five to seven days. It eventually assumes its normal thickness and appearance. The cornea proper becomes gradually clearer and thicker, although never attaining the normal thickness.

Age seems to have little influence on the result, as in one patient on whom the author operated two years ago at the age of 69 years, the vision was improved from hand movements to ability to count fingers at ten feet, with improvement still continuing.

The photographs presented showed the appearance of rabbits with white scars from cauterization, and pictures taken later after the scar had been resected.

The point especially made prominent was that the operator must keep in the same layer of the cornea in which one starts by virtually peeling it away. The operation is not advised in active corneal infiltrations, but only in persistent corneal scars.

It is a delicate and difficult procedure which only the skilled surgeon should attempt. In selected cases, visual and cosmetic results are obtained which no other methods within our present knowledge can supply.

Dr. Thomas Faith believed that the surgical procedure advocated by Dr. Wiener might change the thickness of the cornea to such a degree that a very annoying irregular astigmatism might possibly result. He felt also that the procedure could hardly commend itself at the present time to ophthalmic surgeons. The work done, however, by Dr. Wiener was a valuable contribution to the subject and he hoped that from it would come results of permanent value.

Dr. Richard J. Tivnen agreed with Dr. Faith's view that an annoying irregular astigmatism of the cornea from Dr. Wiener's procedure might be expected. The operation as described by Dr. Wiener impressed itself as being very technical and one not to be recommended to the average surgeon. The dissection of the opacity without puncturing or injuring Descemet's membrane would seem to him to be exceedingly difficult. Dr. Wiener's observation that the substantia propria regenerate without the formation of scar tissue is a new pathologic observation. The method of Dr. Wiener is certainly a distinct step in advance and deserves a thorough trial.

TWO ADDITIONAL CASES OF IRITIS TREATED WITH SALVARSAN

Dr. Willis O. Nance reported two additional cases of acute iritis which had been treated with 606. The results following the use of the Ehrlich preparation were prompt and positive. In one instance the deep and intense ciliary infection had entirely cleared 48 hours following the injection. In the other, an unusually virulent type with iritic gumma, the patient was practically well so far as appearances indicated, three days after injection. One case was doubly interesting in that the eye that was treated according to the classical mercury and iodid method last fall required four weeks to clear up and at the present time there are positive and pronounced evidences of permanent posterior synechiæ, in contrast to the rapidity with which the symptoms disappeared in the salvarsan-treated eye and the entire absence of any sequelæ.

If further and elaborate clinical experience demonstrates that 606 can be depended upon to produce results in from two to four days as it has in the present cases, or even in two or three times this length of time, it appeared to Dr. Nance that its use would be a marked advance in ocular therapeutics in not only saving the patient days or weeks of suffering and inconvenience, but in preventing the occurrence of permanent and at times serious sequelæ, as posterior synechiæ and chorioidal involvement.

Dr. W. H. Wilder had recently observed a case of syphilitic tarsitis of the upper lid in a young married woman that yielded very promptly to the effect of salvarsan. The lid was much thickened so that it completely covered the eye and seemed to threaten to break down. In addition to the lesion of the lid, there was a large circinate syphilide on the back of the neck extending down onto the right shoulder with raised borders ulcerated in places. The Wassermann test gave a distinctly positive reaction. After one injection of salvarsan, the lesion of the lid disappeared with remarkable rapidity, as did also the lesion on the back of the neck, so that in two weeks the patient was practically well, and the right upper lid showed only a slight thickening.

DIPLO-BACILLARY INFECTIONS OF THE EYE

Dr. Harry S. Gradle gave a short review of the work on the vitality of the Morax-Axenfeld diplo-bacillus in experimental work together with some of his own results. All the work tends to show that the action of zinc sulphate in varying concentration does not actually kill the organisms, although the clinical results from the use of that drug are satisfactory. Silver nitrate in one-tenth per cent. solution accomplishes the result more rapidly.

Anti-bodies against the diplo-bacillus are not produced by the human organism, but are found extensively in the lower animals and increase in them in large amounts by active immunization. This fact is employed in the serum treatment of the chronic conjunctivitis and ulcers caused by the diplo-bacillus. The serum of a rabbit immunized against the organism, is applied locally in the conjunc-

tival sac twice daily for a period of several weeks with very beneficial results. The author cited several cases that had responded well to this form of treatment. The serum therapy is not meant to replace zinc sulphate in those cases that respond to that drug as a specific, but in the few cases that fail to respond at all.

SCLERAL CYST

Dr. H. W. Woodruff presented a case of cyst of the sclera which had followed an operation for pterygium. The operation was that of McReynolds.

Dr. Oliver Tydings believed that while the history of the case would point to the growth being one of cystic nature, yet the appearance would indicate that it was of a solid nature.

Dr. Clark W. Hawley had met with a case similar to that shown by Dr. Woodruff. The patient was a physician operated on at the Post Graduate Hospital. The growth was about one-half as large as the one shown. It disappeared without treatment.

WILLIS O. NANCE, Secretary.

MADISON COUNTY

The Madison County Medical Society met in Granite City on August 4, with Dr. E. C. Ferguson, vice-president, in the chair. Members present: Drs. Pfeiffenberger, Luster, Burroughs, Hamm, Harlan, Wilkinson, Hastings, Spitze, Wedig, Theodoroff, Armbruster, Ferguson, Hirsch, Oliver, Johnson, Grayson, Schreifels, Schroeder, R. B. Scott, Binney, Seebold, Lemen, W. T. Davis, J. W. Scott and E. W. Fiegenbaum. Visitors: Drs. Gunn and Boyd, of East St. Louis.

Dr. E. C. Spitze, of Edwardsville, read a paper on "What the General Practitioner Should Know About the Eye," which contained many practical points and much useful information. Dr. Geo. E. Wilkinson, of Alton, led the discussion which soon became general. The program was an interesting one and was highly appreciated by all.

The next meeting will be held in Edwardsville, on September 1, and will be an innovation. The subject will be "Law and Medicine," and it will be presented by leading attorneys of the county, not a doctor appearing on the program.

E. W. FIEGENBAUM, Secretary.

OGLE COUNTY.

The Ogle County Medical Society met in regular session at the Court House, Oregon, Ill., July 19, 1911. The president not being present, vice-president, S. D. Houston of Polo, called the meeting to order. Minutes of the previous meeting were read and approved by the secretary. Report of the treasurer was read and accepted. Members present: Drs. Alrutz, Beveridge, Beard, Brigham, Houston and Kretzinger.

The following officers were duly elected for the ensuing year: President, Dr. S. D. Houston, Polo; vice-president, Dr. L. F. Alrutz, Oregon; secretary-treasurer, Dr. J. T. Kretsinger, Leaf River; delegate to state society, Dr. C. R. Bingham, Rushville; alternate, Dr. L. F. Alrutz, Oregon; censors, Drs. Atkins and Beveridge.

The Board moved that the next meeting be held at Polo. Carried.

No further business to come before the society, the meeting adjourned to meet at Polo, October 18, 1911.

PIKE COUNTY

The Pike County Medical Society held its regular meeting in Pittsfield, July 27, 1911. Members present: Drs. Beavers, Smith, Garrison, Barber, Main, McComas, Shastid, Reynolds, Peacock, McConnell, Lacy, Miller and Duffield.

After reading and approval of the minutes of the previous meeting, the application of Dr. Charles A. Johnson of Barry for membership was unanimously

rejected. There being no further business, Dr. A. E. Taussig of St. Louis read a paper on "Modern Methods in the Treatment of Heart Disease," and gave a demonstration in the use of the sphygmograph, all of which was very interesting and of much benefit to the society. The subject was thoroughly discussed afterwards. Dr. Shastid reported a case of slow pulse followed by insanity. Dr. Garrison reported a case of fast pulse continuing several weeks which finally slowed down after free hemorrhage from the lungs.

Dr. Duffield reported a case of difficult removal of a hard ball pessary that had been worn fourteen months without removal. Deliverance was accomplished with a fetal forceps with much pain and followed by free hemorrhage from laceration. The patient had this introduced to relieve a varicocele, but now prefers to introduce her finger into the vagina, and finds that pressing upward during urination thoroughly empties the bladder, thus preventing any irritation resulting from residual urine being retained. This plan she originated herself, and it is certainly reasonable and commendable. A vote of thanks was tendered Dr. Taussig for his paper.

It was decided to omit our October meeting and give way to the district meeting, which meets here in Pittsfield, October 27, 1911. Society adjourned subject to call of secretary.

H. T. DUFFIELD, Secretary.

ROCK ISLAND COUNTY

The bi-monthly meeting of the Rock Island County Medical Society was held Tuesday evening, June 13, 1911, at the Manufacturers' Hotel, Moline. Minutes of the April meeting were read and approved. The annual (1910-11) reports of the secretary and treasurer were read. The application of Dr. D. B. Freeman of Moline, which was laid over from the last meeting, was presented for action, the committee having reported favorably. After some discussion the application was ordered laid on the table. The resignation of Dr. J. P. McManus, Rock Island, was accepted, the Doctor having located in Iowa. Resignations of Drs. R. C. J. Meyer and F. H. Gardner, Moline, were presented. Action was deferred and the president, Dr. Eddy, was appointed to confer with them. Bills allowed; New Harper Hotel, $23; flowers for late Dr. J. W. Morgan of Moline, $5; printing, $2. A proposition from the Rock Island County druggists for another get-together meeting was ordered tabled. The program of the evening being a memorial to the late Dr. G. G. Craig, Rock Island, was in charge of Drs. C. Bernhardi, J. DeSilva and E. M. Sala. Dr. Sala presided. Remarks were made by Drs. Eyster, Eddy, Sala, Asay, Dunn and Mueller on Dr. Craig's initiative and ability in Sanitary, Health and Medical Organization. The following resolution was then adopted:

WHEREAS, The Supreme Ruler of the Universe has seen fit to remove from our midst the late Dr. G. G. Craig, that we as an expression of respect and appreciation coming from the Rock Island County Medical Society, extend to the family of the deceased Dr. G. G. Craig our sincere sympathy in this hour of bereavement,

WHEREAS, We feel deeply the loss of one who has always been so active in the profession and one who has ever been ready to respond to the many calls of his profession, being in the harness till the last; and

WHEREAS, Dr. Craig did much to make the Rock Island County Medical Society what it is to-day; therefore be it

Resolved, That a copy of these resolutions be spread upon the records of this society and that a copy thereof be sent to the immediate family of the deceased Dr. Craig.

E. M. SALA, M.D.,
C. BERNHARDI, M.D.
JOSEPH DESILVA, M.D.
Committee.

Meeting then adjourned. Present: Drs. Long, Ostrom, Lamping, Chapman, Williams, Rinehart, Johnson, Asay, Love, Sala, Leipold, Snively, Eddy, Souders, Bennett, Dunn, Mueller. Visitor: Dr. C. E. Donahoo, East Moline.

ALBERT N. MUELLER, Secretary.

NEWS OF THE STATE

NEWS

—The State Board of Administration has had drafted the itinerary of a trip to visit the seventy-one sites offered for the new state insane hospital for which $1,500,000 has been appropriated by the legislature.

—The Chicago Department of Health sent their health exhibit, in charge of Dr. C. St. Clair Drake, to the Canadian National Exposition, held in Toronto August 25 to September 11.

—The Franciscan Sisters' Hospital, Highland, known as St. Joseph's Hospital, closed its doors temporarily, August 9, on account of lack of funds. The Sisters claim that they are obliged to accept a certain percentage of charity patients and that for county patients the hospital receives only 50 cents a day for the first fifteen days and 20 cents a day thereafter.

—The governor has signed the house bill providing for the establishment of a state institution where indigent children under 14 years of age may receive treatment for deformity or injury. It is to be known as the Illinois Surgical Institute and will be located on a site of 160 acres to be donated, and will be under the management of the State Board of Administration. A second bill appropriating $60,000 for buildings for the new institute and $15,000 for furnishing and equipment was also signed by the governor.

—Preliminary plans for the new Cook County Hospital have been completed by the county architect. The main portion of the new structure first to be erected will cost between $2,000,000 and $3,000,000. It will be nine stories high, 950 feet long and 59 feet wide, fronting on Harrison Street, and will accommodate approximately 1,300 patients. On the ninth floor of the building will be seven operating rooms and two amphitheaters together with the necessary anesthetic and recovery rooms, etc. There will also be four roof-gardens at the disposal of the patients.

—At the annual meeting of the Association of Military Surgeons of the State of Illinois held in connection with the meeting of the National Guard Association, July 29, in Chicago, Brigadier General Charles Adams, surgeon general, was elected president; Major Thomas J. Sullivan, assigned Seventh Infantry, vice-president, and Major Samuel C. Stanton, secretary to surgeon general, secretary and treasurer, all of Chicago. Major Thomas C. McCord, Paris, assigned Fourth Infantry and David W. Rogers, Chicago, chief sanitary officer, and Captain Arthur F. Wilhelmy, assigned Fifth Infantry, presented reports of their respective tours of duty at the maneuver division on the Mexican frontier.

PERSONAL

Dr. L. P. Kuhn of Fairbury has moved to Chicago.

Dr. Glenn Young of Pontiac is attending clinics in Baltimore.

Dr. J. E. Brock of Pontiac has moved to Arkansas City, Kansas.

Dr. and Mrs. Harry D. Ohr, Chicago, have returned from Europe.

Dr. James Mitchell of Pontiac is spending the summer in Europe.

Dr. and Mrs. Wesley J. Woolston, Chicago, have returned from Europe.

Dr. Thomas S. Crow, county physician of Cook County, resigned July 20.

Dr. George S. Chalmers, coroner of Knox County, is reported to be ill with pleurisy.

Dr. Ralph R. Campbell announces his return to Chicago and resumption of practice.

Dr. J. B. Pecival, superintendent of Cook County institutions at Dunning, resigned August 21.

Dr. John A. Pratt, Aurora, has been appointed oculist for the Aurora division of the Burlington system.

Dr. Alexander Hugh Ferguson, Chicago, is reported to be seriously ill with septicemia due to a carbuncle.

Dr. Joseph P. Smyth, Chicago, has been elected high chief medical examiner of the Catholic Order of Foresters.

Dr. George F. Ruppert, Elgin, sustained a painful injury to the right eye while working over an automobile, July 18.

Dr. Harry S. Gradle has been elected professor of ophthalmology in the Chicago Ear, Eye, Nose and Throat Hospital.

Dr. Frank Branen, Chicago, sustained painful injuries August 6 in a collision between an automobile and a street car.

Dr. Charles E. Crawford, Rockford, has been elected grand medical examiner of the Sons of St. George, Illinois jurisdiction.

Dr. Elmer E. Nystrom, assistant physician of Peoria County, who has been dangerously ill with an infection of the ear, is convalescent.

Drs. George A. Torrison, Charles M. McKenna, Truman W. Brophy, Rudolph Beck and Dr. and Mrs. Carl Beck, of Chicago, have sailed for Europe.

On July 9, Dr. and Mrs. F. E. Tulley of Granite City started on their 10,000 mile automobile tour of the West. They expect to be gone several months.

Dr. Charles B. Dirks, a member of the staff of the Kankakee State Hospital, has been appointed assistant superintendent of the Elgin State Hospital.

Dr. James A. Rutledge, Elgin, has been appointed medical director of the Modern Woodmen's Sanatorium, Colorado Springs, and will assume charge after September 1. At present the sanatorium accommodates 180 patients, but when completed the capacity will be 400.

REMOVALS

Dr. L. P. Kuhn of Fairbury, Ill., has removed to Chicago.

Dr. T. J. Hurst has removed from Ewing, Ill., to Carbondale.

Dr. W. O. McBride of Joliet, Ill., has removed to Marinette, Wis.

Dr. Walter C. Jones has removed from Chicago to Evanston, Ill.

Dr. W. C. Ragsdale of Metropolis has removed to Creal Springs, Ill.

Dr. J. E. Brock has removed from Pontiac to Arkansas City, Kan.

Dr. John W. Ovits of Yorkville, Ill., has removed to Plattville, Ill.

Dr. A. D. Miller has removed from Sullivan, Ill., to Harrisburg, Ark.

Dr. James A. Rutledge has removed from Elgin, Ill., to Colorado Springs, Colo.

Dr. Helen Ryerson has removed from Batavia, Ill., to 136 Stevenson Street, Reno, Nev.

Dr. L. S. Dietrich of 3270 North Clark Street, Chicago, has removed to Deer Lodge, Mont.

Dr. S. B. Herdman has resigned as physician to a mining company at Gilbert, Minn., and will locate in Taylorville, Ill.

NEW INCORPORATIONS

—American College of Pathology and Bacteriology, Chicago; educational. Incorporators, Harry L. O'Connor, Thomas F. Alderson, James F. Forbes.

—National Sanitarium and Springs, Freeport; capital $3,000; maintain and operate a sanitarium; incorporators, G. E. Shoemaker, W. E. Iacobs, D. S. Giserich.

PUBLIC HEALTH

THE DECLINE AND FALL OF THE HOUSE FLY *(Written in Year 2011)*. —The *Musca domestica* (or house fly) is generally called by its initial letters, "m. d.," this name being specially appropriate on account of the fact that for many decades the real "M.D.'s" would have starved to death if the flies hadn't made typhoid and other patients for them. The decline and fall of this pestiferous insect dates from the first of the Twentieth Century, when Tanglefoot first came into general use. The death-rate increased about 4 per cent. during the first decade of the Tanglefoot Era. A few years later the Swatsika Club was organized and the fly market took another big slump. The Swatting Period was followed a few years later by the Fly Trap Time and the bugs began to die at an astonishingly rapid rate. The next important step was about the year 1920, when the several states of the Union enforced laws compelling the use of garbage cans with lids on them. This period is known as the Garb Age and during this time the food supply of the insects was practically shut

off. The natural result was high cost of living and millions and millions of the m. d.'s starved to death. The fly race was practically extinct by this time and the government finished the job by passing a law compelling grocers and fruit dealers to keep their produce indoors and either in fly-tight packages or under screens. The *Musca domestica* is no more.—*C. H. Gamble in Galva News.*

WHAT MUST WE DO TO BE SAVED?

The Slaughter of Little Babies In the City of Chicago

AMOUNTS TO 6800 YEARLY.

AT LEAST 3500 OF THESE DEATHS ARE AVOIDABLE.

EDUCATION FOR PREVENTION.

Poster issued by the Chicago Department of Health.

MARRIAGES

JOHN LEWIS NEWMAN, M.D., to Miss R. Steph, both of Chicago, July 3.

WILLIAM H. ENOS, M.D., Alton, to Miss Marion McKee, at Alton, July 22.

WESLEY J. WOOLSTON, M.D., to Miss Edna Chappell, both of Chicago, June 28.

LUCIUS C. PARDEE, M.D., Chicago, to Mrs. Anna M. Trumbull, at Old Mission, Mich., July 1.

DEATHS

JAMES W. MCKEE, M.D., Western Reserve University, Cleveland, 1870; University of Wooster, Cleveland, 1872; died at his home in Blue Island, Ill., July 21, aged 66.

CHARLES LANNING, M.D., State University of Iowa, College of Homeopathic Medicine, Iowa City, Iowa, 1885; died at his home in Morrison, Ill., July 5, from cerebral hemorrhage, aged 68.

JAMES EARLY FINLEY, M.D. Medical College of Ohio, Cincinnati, 1864; a native and a life-long resident of Mt. Pleasant, Ohio, died at his home in that village, July 14, aged 74.

DR. FRED R. STONER was found dead at his home in Decatur, Ill., Aug. 18, 1911. Death was caused by the accidental discharge of a gun which he had been cleaning. He was a graduate of Rush Medical College.

JAMES M. FOWLER, M.D. (license, Illinois, years of practice, 1878); a veteran of the Civil War; at one time superintendent of schools of Williamson County, and a member of the legislature; died at his home in Crab Orchard, July 27, aged 65.

DR. JOHN F. MYERS of Petersburg, Ill., died Aug. 19, 1911, at St. John's Hospital, Springfield, Ill., age 73 years. Dr. Myers has been practicing in Petersburg for the last thirty-three years. He was a surgeon in the Confederate Army during the Civil War.

JOHN ALFRED WARREN, M.D., Eclectic Medical Institute, Cincinnati, 1873; a member of the Illinois State Medical Society; a member of the local board of pension examining surgeons of Greenville, and a member of the local board of health; died at his home, July 20, aged 75.

DR. WILLIAM HOPE DAVIS, formerly of Springfield, Ill., died at his home in San Antonio, Texas, Aug. 5, 1911. He was born in Greene County, N. Y., in 1837, and began the practice of medicine in 1857; he is survived by his wife, two sons and two daughters. Burial took place at Springfield, Ill., July 9, 1911.

GEORGE M. HAINES, M.D., College of Physicians and Surgeons, New York City, 1870; a member of the American Medical Association, for thirty-one years a practitioner and once mayor of Durand, Ill., once vice-president of the Winnebago County Medical Society, died in Grand Junction, Colo., July 5, from nephritis, aged 64.

HOOK WUM PHILOSOPHY

Dey says dat Ise a no-'count man. Dey says I got no 'scuse
A-litterin' up de lan'scape, en dey say I ain' no use.
De preacher says dat I's so slow, it gwinter come to pass
I'll be debbil's piece er punk, en las', en las', en las'!
But ef dey lemme 'lone, I ain't a-ans'erin' deir sass.

I *kin* wuk ef I'se a minter. I kin wuk, er let it be,
But I got no call to pester wuk dat does n' pester me.
I been a-watchin' wuk-folks while I'se settin' in de sun,
En de mo' dey wuks, de mo' dey wuks. Dey nuvver gits no fun,
'Caze what 's de use er doin' whut dey nuvver does get done?

Dey says I got de hook-wum, en dey gwinter fish me out.
But des yeah hook-wum doctehs ain' so suah what dey's about,
'Caze I know'd a whi' man one day git a misery inside,
En dese yeah hook-wum doctehs tuk en cut him froo de hide
En fished his wurmy outer him, en den dat whi' man died.

Whut's dis yeah hook-wum did ter dem? Why ain' dey let him be?
It is n't dem he's eatin; no suh, he's a-eatin' me!
When dese yeah doctehs comes en says dey knows a pow'ful lot
Huccume dis hook-wum in me, en a-pintin' at de spot,
I tels 'em dis yeah hook-wum is de bes' frien' dat I got.

I is n' gwine ter chase him out. I ain't no such a fool.
Dey useter wuk me ev'y day des like I was a mule,
But now dey nuvver ax me, 'caze dey says I ain' no use;
Dey says I *cain't* wuk, caze dat wum is eatin' all meh juice,
En ef I lose dat hook-wum, wha' I git anudder 'scuse?

—*Edmund Vance Cooke.*